AN URBAN-GEOGRAPHICAL STUDY OF RANDFONTEIN

by

P.J. VENTER

Thesis presented as part of the requirements

for the degree

MAGISTER ARTIUM in GEOGRAPHY

at the

POTCHEFSTROOM UNIVERSITY FOR CHRISTIAN HIGHER EDUCATION

December 1975

OPSOMMING

Verhandeling behels

Die ~~tesis~~ ~~is~~ 'n stedelike geografiese studie van Randfontein. Die algemene doel is om aan te toon hoe Randfontein van 'n myngemeenskap ontwikkel het tot 'n volwaardige industriële dorp met 'n gesonde, goedgebalanseerde stedelike ontwikkeling.

Die goudmynbedryf

~~Randfontein se vroeëre geskiedenis is geleë in die goudmyn-~~ ~~bedryf~~ wat aan die dorp goeie geleentheid gebied het vir ont-wikkeling. ~~Dit was inderdaad beskou as een van die wêreld se~~ ~~rykste goudmyne.~~

het die oorheersende rol gespeel in Randfontein se vroeëre geskiedenis. Randfontein Estates is inder-daad beskou as een van die wêreld se rykste goudmyne.

Die goudmyn bedryf is egter onvoorspelbaar en ~~dit was nood-~~ ~~saaklik dat as~~ die dorp funksioneel en administratief onaf-hanklik wou wees, daar ander bronne van inkomste gevind ~~moes~~ word.

indien

moes

Die goeie vervoerdienste en Randfontein se ligging naby die ~~stad~~ en die graanproduserende gebiede het 'n groot graan-verwerkingsmaatskappy ~~hulle~~ hoofkwartier in Randfontein laat ~~setel~~. Vooruitstrewende geassosieerde industrieë 'skyn 'n natuurlike deel van die dorp se ontwikkeling te wees.

Sy

vestig

?

Spoedig het ander industriee hierdie voorbeeld gevolg.

Die geweldige uitbreiding het 'n bevolkingsaanwas tot gevolg ~~gehad~~. Die ontwikkeling op industriële- en handelsgebied het baie mense na Randfontein gelok en die woongebied het vinnig vergroot om Randfontein se stedelike status te verseker.

Aangesien Randfontein aan die Hoofrifweg geleë is, word die dorp sterk van buite beïnvloed. Daar is 'n ~~geweldige~~ groot wisselwerking tussen Randfontein, Johannesburg en die ander dorpe aan die Rand. Dit ~~is~~ duidelik ~~aangetoon~~ blyk uit die vervoer- en bevolkingssyfers in die verhandeling.

Met die onlangse opening van 'n nuwe myn in die gebied en die proklamering van meer en groter industriële gebiede moet die belangrikheid van die dorp nie onderskat word nie.

Daar bestaan geen twyfel oor die sekerheid van die dorp se toekoms of ~~aan~~ oor die geweldige ontwikkelingsmoontlikhede nie.

C O N T E N T S

		Page
LIST OF ILLUSTRATIONS	----------	iii
ACKNOWLEDGEMENTS	----------	v
CHAPTER 1:	INTRODUCTION ----------	1
1.1	GENERAL ----------	1
1.2	PURPOSE OF PRESENT STUDY ----------	2
1.3	HYPOTHESIS ----------	2
1.4	LOCATION OF STUDIED URBAN AREA ----------	3
CHAPTER 2:	PHYSICAL BACKGROUND ----------	9
2.1	TOPOGRAPHY AND DRAINAGE ----------	9
2.2	CLIMATE ----------	11
CHAPTER 3:	HISTORICAL DEVELOPMENT ----------	19
3.1	THE FOUNDING OF RANDFONTEIN ----------	19
3.2	GROWTH OF RANDFONTEIN ----------	19
3.3	DEVELOPMENT OF MINING ----------	24
3.4	GEOLOGICAL STRUCTURE ----------	27
CHAPTER 4	POPULATION ----------	33
4.1	ANALYSIS OF THE POPULATION ----------	33
4.2	A SOCIOLOGICAL STUDY OF THE RESIDENTIAL AREAS OF RANDFONTEIN ----------	44
CHAPTER 5:	ZONING ----------	90
CHAPTER 6:	URBAN LAND-USE IN RANDFONTEIN ----------	96
6.1	BUSINESS ----------	98
6.2	MANUFACTURING ----------	117
6.3	MINES ----------	132

		Page
6.4	TRAFFIC ----------	138
6.5	TRANSPORT ----------	194
6.6	RESIDENTIAL ----------	209
6.7	PUBLIC SERVICES ----------	213
6.8	EDUCATION ----------	215
6.9	CHURCHES ----------	220
6.10	RECREATION AND PARKS ----------	221
CHAPTER 7:	ELECTRICITY AND WATER ----------	224
7.1	ELECTRICITY ----------	224
7.2	WATER ----------	225
CHAPTER 8:	LAND VALUES IN RANDFONTEIN ----------	229
CHAPTER 9:	EPILOGUE ----------	234
9.1	SUMMARY AND INTERPRETATION ----------	234
9.2	CONCLUSION ----------	238
APPENDIX:	QUESTIONNAIRES ----------	239
	TABLES ----------	241
BIBLIOGRAPHY ----------		335

LIST OF ILLUSTRATIONS

FIGURE NO.	NAME	PAGE
1.	Randfontein in relation to the Witwatersrand	4
2.	Randfontein in relation to its Magisterial District ----------	6
3.	Randfontein in relation to its urban area --	7
4.	Map showing topography and drainage --------	10
5.	Average monthly rainfall ----------	15
6.	Average monthly temperature ----------	18
7.	Map showing distribution of the Witwatersrand and Ventersdorp System of the West Rand ----	30
8.	Diagrammatic section across the Randfontein Leader series, as typically developed at the North - and Robinson - Randfontein Mine	32
9.	Population growth ----------	35
10.	Zoning map of Randfontein ----------	91
11.	Land-use map of Randfontein ----------	97
12.	Map of the C.B.D. ----------	102
13.	Map showing the Industrial Areas ----------	119
14.	Map showing mines ----------	134
15.	Map showing traffic counting positions in the C.B.D.	145
16.	Flow-line diagram for weekday traffic in the C.B.D. ----------	146
17.	Flow-line diagram for Saturday traffic in the C.B.D. ----------	148
18.	Vehicle count locating map ----------	150

FIGURE NO.	NAME	PAGE
19-22.	Flow-line diagrams ----------	152-157
23.	Hourly Movement of vehicles on selected roads ----------	159
24.	Cordon counts for Greenhills ----------	164
25a.	Cordon counts for Homelake ----------	166
25b.	Cordon counts for Randgate ----------	166
26.	Screen-line counts on roads entering Randfontein ----------	169
27.	Map showing parking in C.B.D. ----------	173
28.	Map showing parking in Greenhills ------	177
29.	Map showing parking in Greenhills ------	178
30.	Map showing parking in Homelake --------	180
31.	Map showing parking in Homelake --------	181
32.	Map showing parking in Randgate --------	183
33.	Pedestrian traffic in C.B.D. - Weekday	185
34.	Pedestrian traffic in C.B.D. - Saturday	192
35.	Graph showing electricity bought and sold	226
36.	Graph showing water bought and sold ----	228
37.	Map showing land values per stand -----	231

ACKNOWLEDGEMENTS

I should like to express my sincere appreciation to all who have assisted me in the compilation of this thesis. To the following a special word of appreciation:

Mr. A. Nieuwoudt, as my study leader.

The Town Clerk, Town Engineer and all other persons in the Municipality of Randfontein who supplied information.

The public of Randfontein and all other persons and concerns who helped in the supplying of information.

The Secretary of Randfontein Estates Mines.

The Headmaster, staff and pupils of Randfontein High School.

Mr. T. Townsend, my friend, who undertook the proof-reading.

Mrs. A. Townsend, for the typing.

The other typists who helped, Mrs. R. Van Wyk, Mrs. T. Kamper, Mrs V. Carew.

My parents and parents-in-law, for their interest and faith.

My wife, who made the most sacrifices.

CHAPTER 1

INTRODUCTION

1.1 General

> "The urban geographer is concerned with cities as entities - their locations, characters, growth, relations to the countryside and to each other. But he is at least equally interested in patterns of the city's interior - land-use patterns, social and cultural patterns, patterns of circulation, patterns of the natural environment - all as they exist in interrelation and interaction in the urban area."
>
> (Murphy, 1966, page 2).

Towns that have developed independently, away from the cities are in many cases, sufficiently complex in their evolutionary patterns to merit closer study by the urban geographer. Not only must he be conversant with the basic characteristics of urbanization but he must also develop the ability to appraise and interpret the variety and quality to be found within individual urban establishments and thus be better equipped to approach the practical problems inherent in urban geography.

1.2 Purpose of the present study

The purpose of this study is to establish the extent to which Randfontein has developed away from a mere mining settlement to become an independent manufacturing town having well developed functions and an individual character.

1.3 Hypothesis and Aims

If it is possible to establish that Randfontein has already to a great extent, loosed itself from the dominant influence of the mining industry upon its general development, popula= tion, urban function and labour patterns, then it must be acknowledged that this phenomenon has given rise to other urban functions which have set the town up as one with a balanced secure future, having character and urban patterns of its own. Arising from this hypothesis, the aims of this study may be formulated in the following terms:

i) To show that Randfontein's historical origin lies in the gold-mining industry, the influence of which is indelibly stamped upon the town's early development.

ii) To show the decline of the mines' influence and the extent to which this has allowed other urban developments - ~~namely~~ especially industry - to progress.

iii) To show how this progress has caused Randfontein to become a functionally and administratively independent town on the West Rand.

iv) To show the effect that the close proximity of towns and more specifically Johannesburg has upon the population of Randfontein.

v) To show the extent to which the development of Randfontein has been influenced by the Main Reef Road.

1.4 LOCATION OF THE STUDIED URBAN AREA

Randfontein is situated in the southern half of the Transvaal. The grid position of the town is 27° 42'S and 26° 11'E. Randfontein forms part of the Witwatersrand complex, being situated on the West Rand. It is sometimes regarded as the limit of the West Rand.

Figure 1 shows Randfontein's relative position in relation to nearby urban areas. The map shows the main communication network linking Randfontein with the most important centres.

Randfontein lies comparatively close to all the main West Rand towns and Johannesburg. The distance by road from Randfontein to the centre of Johannesburg is 40 Km. The distances by road to some other centres from Randfontein are: Pretoria - 80 Km, Springs - 80 Km, Vereeniging - 70 Km and Potchefstroom - 100 Km.

Fig. 1

Randfontein In Relation To The ~~Witwatersrand~~ PWV - Area

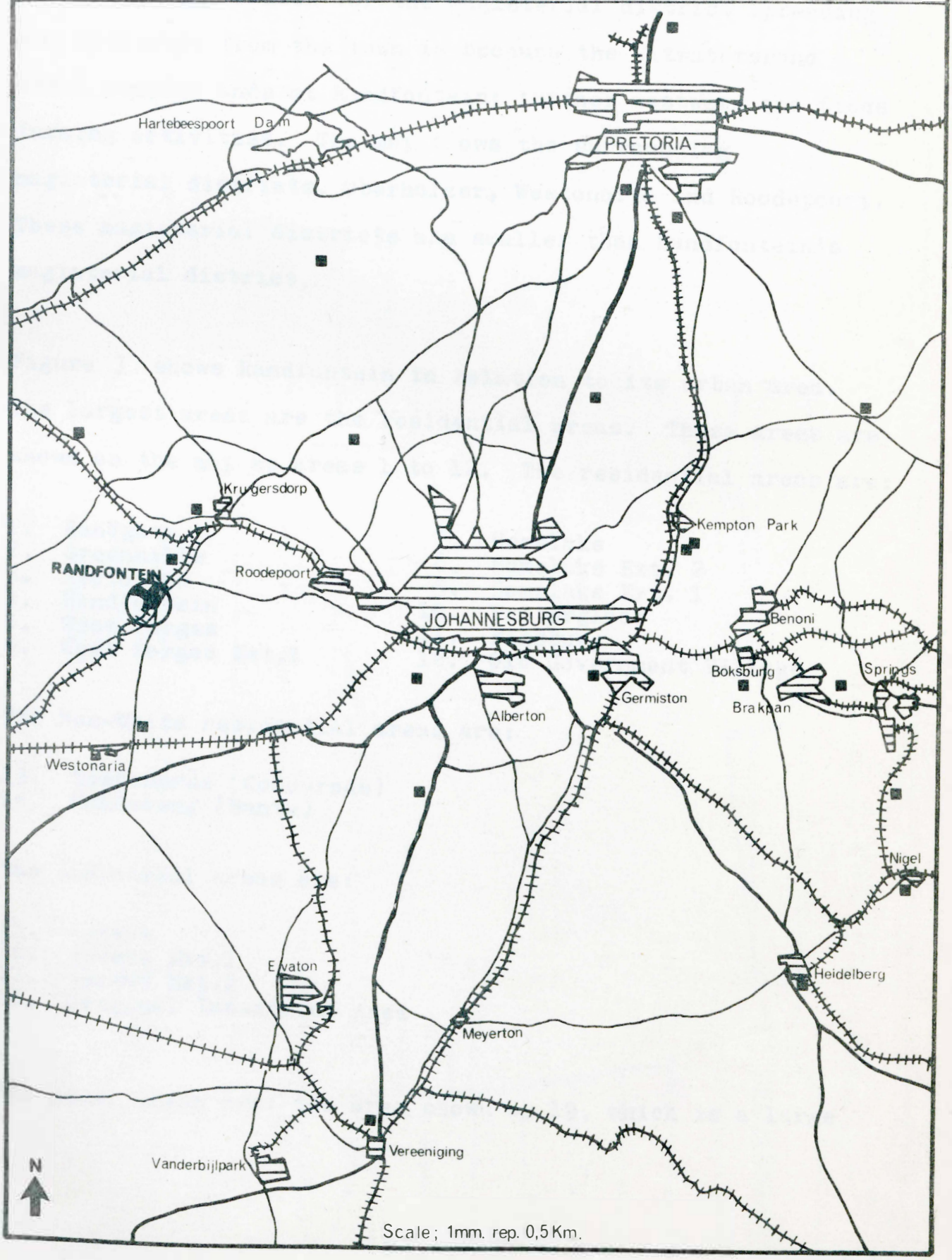


Figure 2 shows the urban area of Randfontein in relation to its magisterial district. It will be noticed that the urban area is situated on the eastern side of the magisterial district. The reason for the magisterial district spreading out westwards from the town is because the Witwatersrand urban complex ends at Randfontein; further westward one finds farming activities. The map shows the surrounding magisterial districts, Oberholzer, Westonaria and Roodepoort. These magisterial districts are smaller than Randfontein's magisterial district.

Figure 3 shows Randfontein in relation to its urban area. The largest areas are the residential areas. These areas are shown on the map as areas 1 to 12. The residential areas are:

1. Randgate
2. Greenhills
3. Hectorton
4. Randfontein
5. West Porges
6. West Porges Ext.1
7. Homelake
8. Homelake Ext. 2
9. Homelake Ext. 1
10. Westergloor
11. Finsbury
12. Old Government Village

The Non-White residential areas are:

13. Toekomsrus (Coloureds)
14. Mohlakeng (Bantu)

The Industrial areas are:

15. Aureus
16. Aureus Ext.1
17. Aureus Ext.2
18. Original Industrial Area

The other areas are: the area shown by 19, which is a large

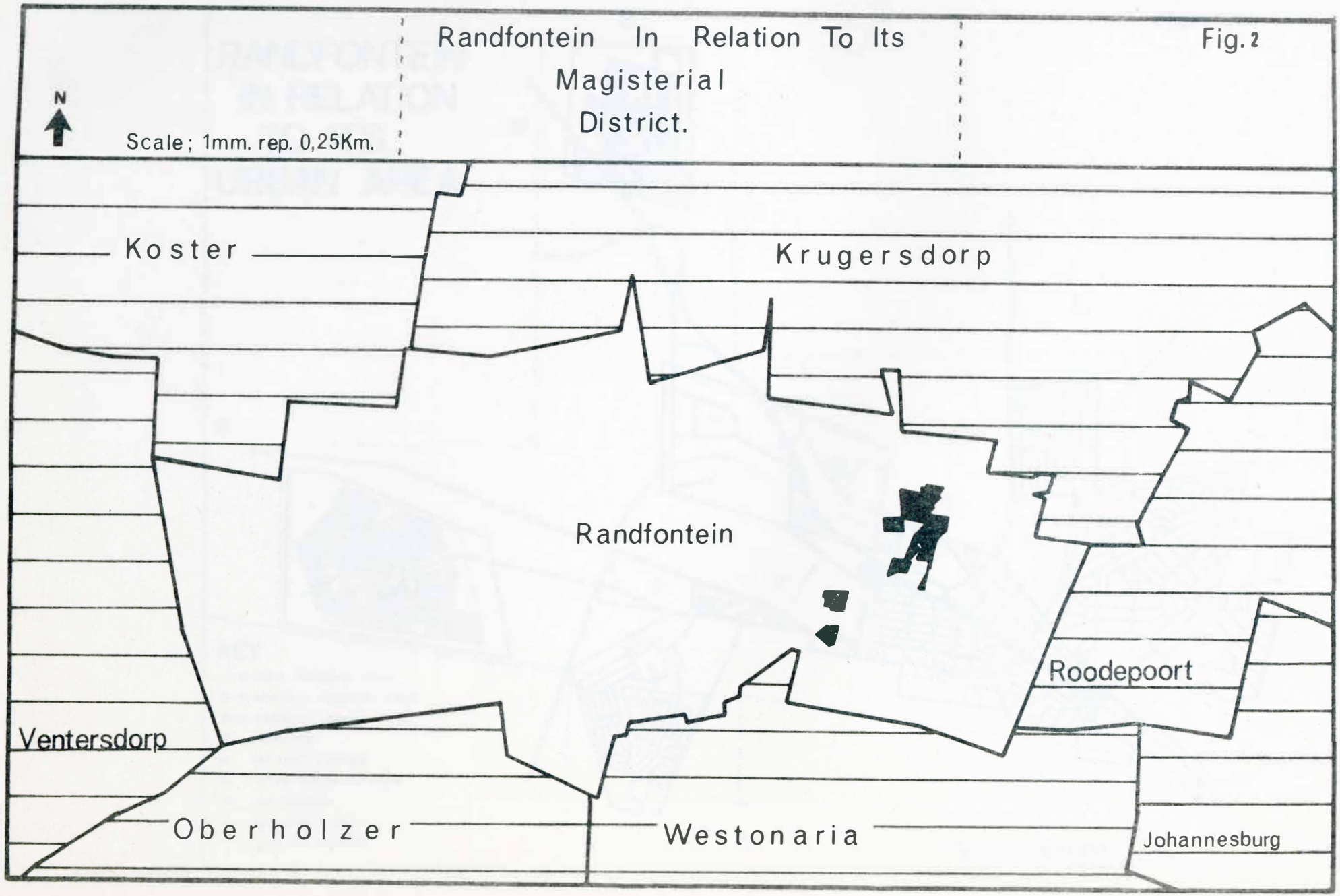
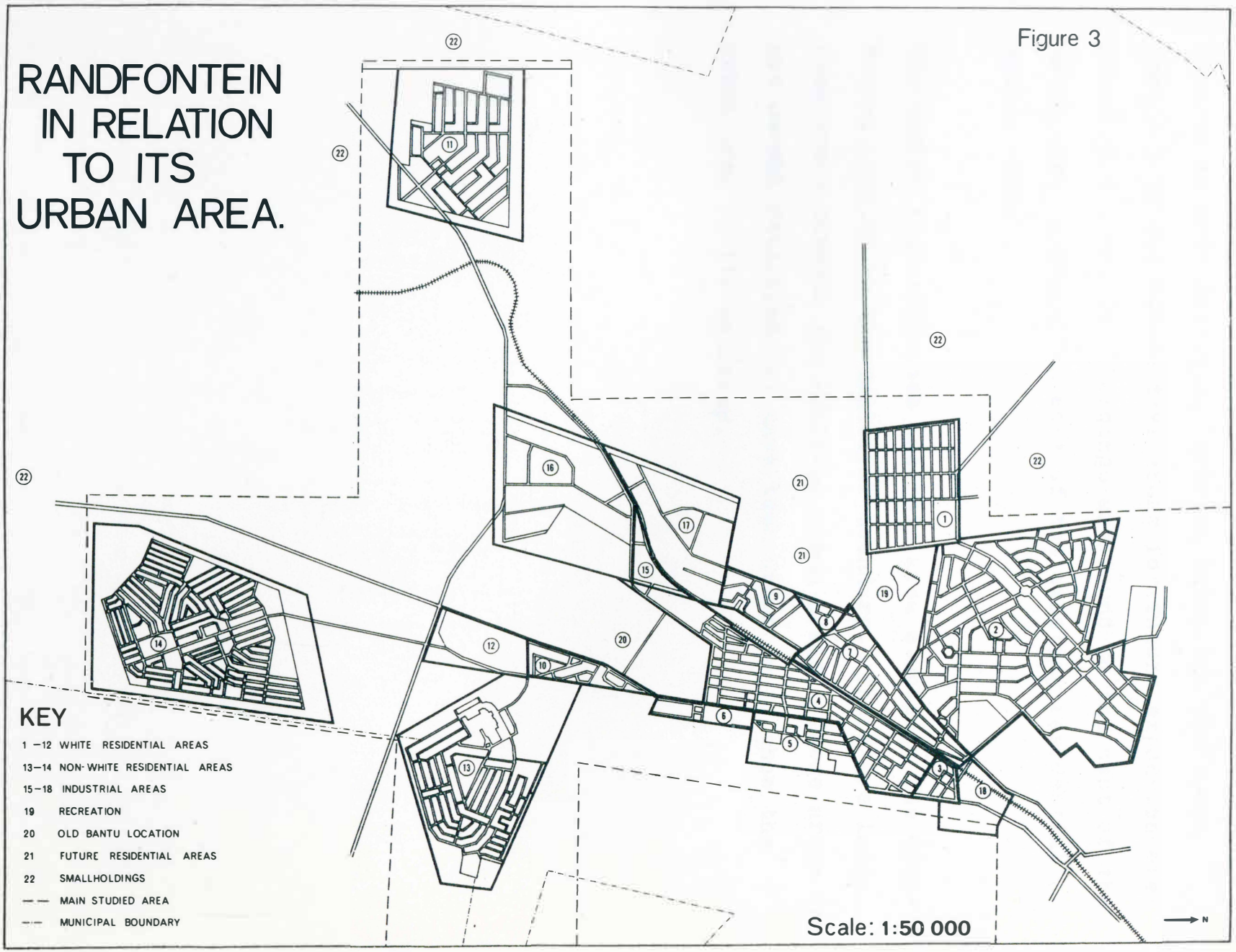

Randfontein In Relation To Its Magisterial District.
Fig. 2
N
Scale ; 1mm. rep. 0,25Km.
Koster
Krugersdorp
Randfontein
Roodepoort
Ventersdorp
Oberholzer
Westonaria
Johannesburg

Figure 3

RANDFONTEIN IN RELATION TO ITS URBAN AREA.



recreation area including Riebeeck lake; the old Bantu location is 20; residential areas for future expansion are found at 21, the smallholdings are found to the west of the urban area surrounding most of the existing residential areas, (22).

The dashed line indicates the main area studied. The dash-dotted line shows the municipal boundary. There are large open areas between the built-up urban areas. These areas are not ~~at all~~ developed but have been drawn in to show the urban area in its entirety.

CHAPTER 2

PHYSICAL BACKGROUND

2.1 TOPOGRAPHY AND DRAINAGE

Randfontein is situated on a comparatively flat area with the relief dipping away towards the north-west, south-west and east. (Refer to the map Figure 4 . The contour map is marked in feet. A conversion table is necessary to determine heights in metres).

CONVERSION TABLE

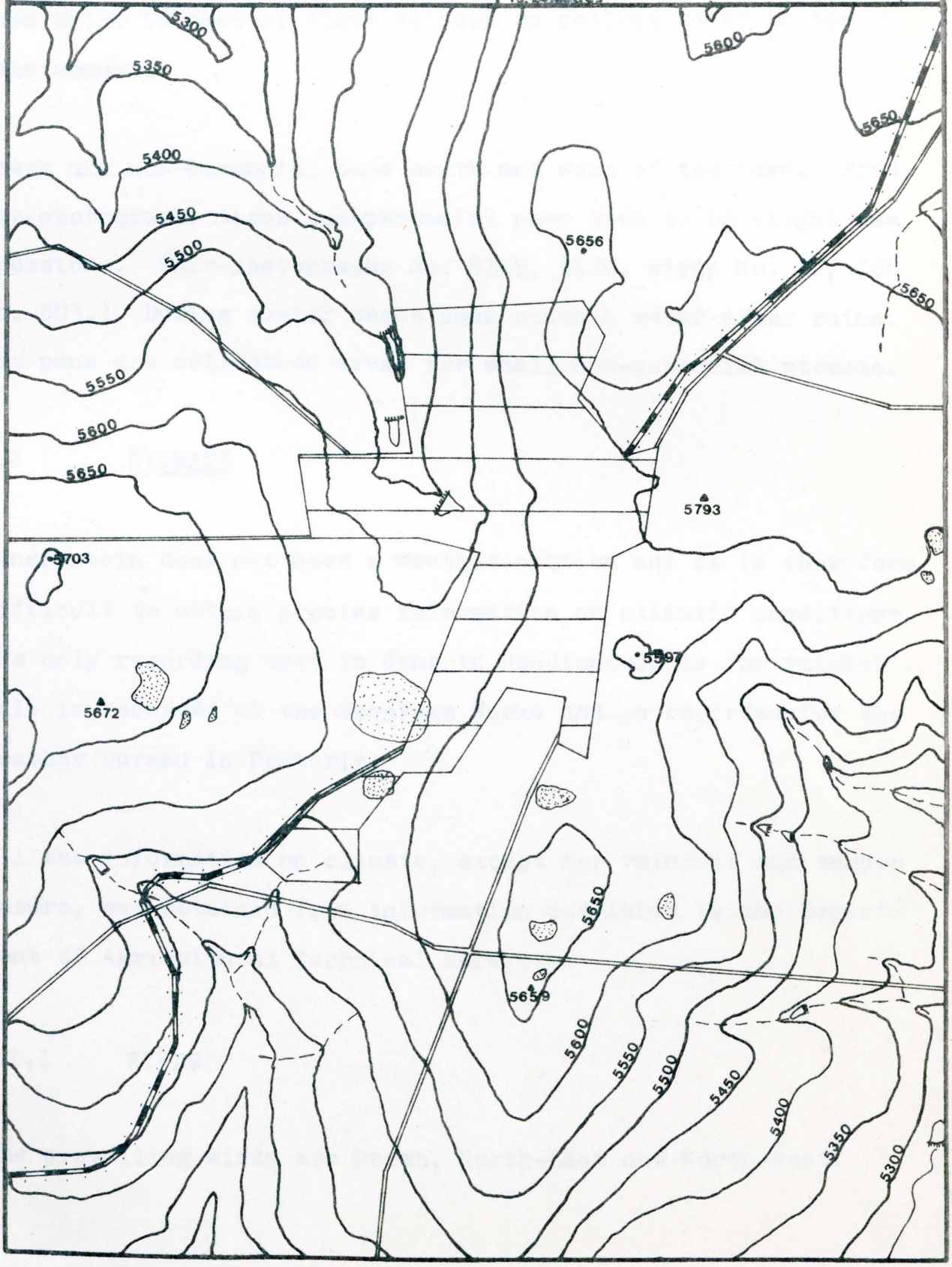
FEET	METRES
5 300	1 615,4
5 350	1 630,7
5 400	1 645,9
5 450	1 661,2
5 500	1 676,4
5 550	1 691,6
5 600	1 706,9
5 650	1 722,1

The western part of the town has a sloping relief down towards the west (the slope is approximately ~~46 metres~~). The highest parts are toward the east of the town (5 793 feet — 1 765,7 metres), west of the town (5 703 feet — 1 738,3 metres), south of the town (5 659 feet — 1 724,9 metres) and north of town (5 656 feet — 1 723,9 metres).

Fig. 4

MAP SHOWING TOPOGRAPHY AND DRAINAGE

SCALE. 1:50 000



There is a drainage pattern resulting from the high area on which the town lies. Very shallow valleyformations are found on the outskirts of the town. They are not of any importance because all the streams are non-perennial. Small dams have been built in most of these valleys to collect water in the rain season.

There are non-perennial pans south and west of the town. From air-photographs these non-perennial pans seem to be slight de= pressions. (Air-photographs No. 8119, 8120, strip No. 22, Job No. 603.) During summer these pans contain water after rains. The pans are collection areas for small non-perennial streams.

2.2 CLIMATE

Randfontein does not have a weather station and it is therefore difficult to obtain precise information on climatic conditions. The only recording that is done in Randfontein is for rainfall. This is recorded at the Sewerage Works and is recorded for the Weather Bureau in Pretoria.

All the information on climate, except for rainfall and tempe= rature, was obtained from information published by the Depart= ment of Agricultural Technical Services.

2.2.1 WINDS

The prevailing winds are North, North-East and North-West.

2.2.2 ATMOSPHERIC PRESSURE

The mean atmospheric pressure for a year is 840 mb.

2.2.3 HUMIDITY

The average humidity through the year in the morning is 70% and in the afternoon 48%.

2.2.4 FROST

The first frosts occur on an average on the 1st to the 10th of May. The last frosts occur on an average on the 31st of August to the 20th of September.

2.2.5 RAINFALL

Randfontein lies in the summer rainfall area. The type of rainfall is convectional rain with thunderstorms. A few cyclonic conditions occur yearly.

TABLE SHOWING RAINFALL FIGURES FOR RANDFONTEIN

JANUARY 1970 TO DECEMBER 1974 (in mm.)

MONTH	1970	1971	1972	1973	1974	AVERAGE TAKEN OVER 45 YEARS	PERCENTAGE OF THE YEARLY RAINFALL
January	119,4	225,7	132,3	55,0	46,1	111,2	17,7
February	107,0	132,5	53,0	44,3	54,6	86,5	13,7
March	20,0	83,7	128,0	67,5	47,9	71,9	11,4
April	36,5	123,5	24,0	60,5	106,5	48,3	7,7
May	12,0	14,0	2,3	-	-	16,9	2,7
June	5,5	9,0	0,4	-	-	6,7	1,1
July	9,5	-	-	-	-	6,8	1,1
August	-	-	3,5	-	-	5,6	0,9
September	10,0	31,0	7,6	33,5	10,0	15,5	2,5
October	66,5	61,5	51,5	64,6	52,8	56,0	8,9
November	114,5	63,1	127,0	97,3	175,0	95,4	15,2
December	99,1	58,0	77,0	62,0	114,5	107,7	17,1
TOTAL	600,0	802,0	606,6	484,7	607,4	628,5	100,0
% of average yearly rainfall	95,5	127,6	96,5	77,1	96,6	100	
Deviation	-4,5	+27,6	-3,5	-22,9	-3,4	0	

During October to March, 80 — 85% of the annual precipitation occurs. There is a ~~remarkable~~ decrease in rainfall during March, April and May. Periodic droughts are experienced during February (a fact which may be observed if recorded figures since 1930 are taken into account). The driest months are during winter; June, July and August. December and January are the wettest months, 34,8% of the yearly precipitation occurs during these two months.

An interesting observation which may be made from the table is that the varying yearly precipitation (i.e. the average deviation from the long term average expressed as a percentage of the average yearly rainfall) does not deviate to a great extent in spite of the fact that an unusually high deviation was recorded in 1971 (+27,6%). By comparison the year that showed the best varying yearly precipitation figure was 1974 (-3,4%).

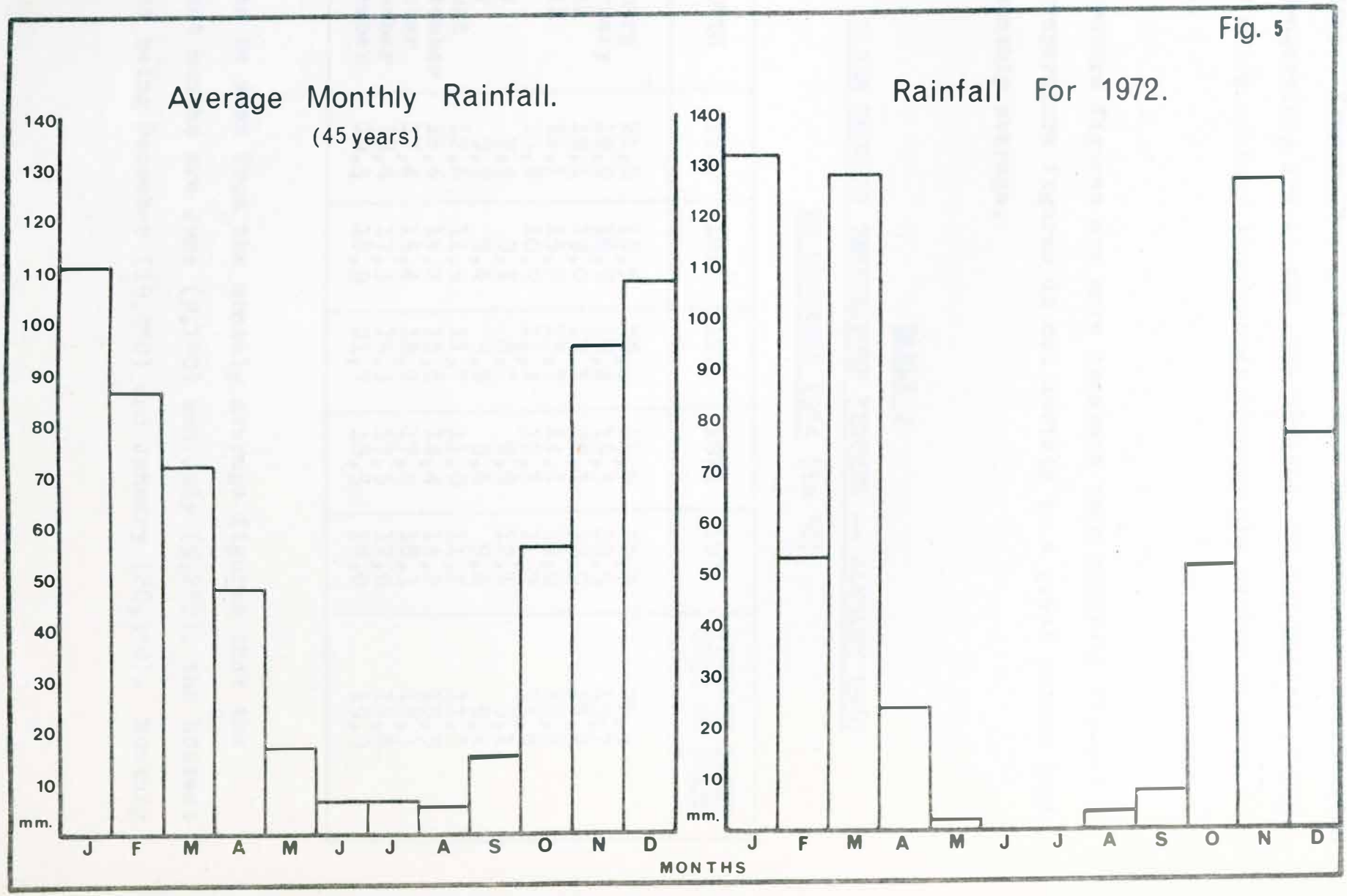
This observation cannot be taken as a true reflection for an average year, because 4 dry months were recorded during 1974.

Notably, however, a deviation of -3,5% was recorded for 1972, which experienced 2 dry months. Therefore it was decided that the average monthly rainfall figures together with the recordings made for 1972 would serve as the best basis for the bar-diagram Figure 5 .

2.2.6 TEMPERATURE

No temperature figures are recorded in Randfontein. The

Fig. 5


Average Monthly Rainfall.
(45 years)
Rainfall For 1972.
140
130
120
110
100
90
80
70
60
50
40
30
20
10
mm.
J F M A M J J A S O N D
MONTHS

nearest temperature recording point is in Coronation Park Krugersdorp. Krugersdorp is 12 km. from Randfontein. Randfontein and Krugersdorp are at the same attitude (1 707 metres). The 1 707 metre contour line passes through the centre of both towns.

Temperature figures are more constant than rainfall figures. The temperature figures do not deviate to a great extent from the monthly average.

TABLE 2

TABLE SHOWING TEMPERATURE FIGURES — JANUARY 1970 TO DECEMBER 1974 (in °C)

MONTH	1970	1971	1972	1973	1974	AVERAGE TAKEN OVER 65 YEARS
January	21,0	19,5	19,3	21,9	19,5	20,3
February	19,9	18,9	19,4	19,5	19,5	19,7
March	19,1	19,0	19,1	20,1	17,9	18,2
April	16,1	15,6	15,7	14,1	14,0	15,3
May	13,8	10,9	11,4	12,1	11,7	11,8
June	9,4	9,5	8,7	9,9	12,1	9,1
July	9,9	9,6	9,6	9,6	9,6	9,2
August	12,6	11,5	11,7	11,0	11,2	11,8
September	16,6	16,2	15,8	14,4	14,2	15,5
October	17,4	16,4	18,7	17,0	18,3	18,3
November	19,4	17,3	19,3	17,5	17,6	18,8
December	19,3	18,9	21,7	18,5	19,0	19,9

It can be seen from the monthly average figures that the coldest months are June (9,1°C) and July (9,2°C), the hottest months being December (19,9°C) and January (20,3°C). Monthly

averages for the past 5 years do not deviate to a great extent from the averages. In 1974 the greatest deviation occured during June (12,1°C), (the average for June is 9,1°C, a difference of 3°C). The second highest deviation occured in March 1973 (20,1°C), (the average for March is 18,2°C, a difference of 1,9°C). A similaar difference (1,9°C) was experienced in October 1971.

An interesting pattern emerges from the table if average monthly temperatures are compared.

December	19,9°C	January	20,3°C
November	18,8°C	February	19,7°C
October	18,3°C	March	18,2°C
September	15,5°C	April	15,3°C
August	11,8°C	May	11,8°C
July	9,2°C	June	9,1°C

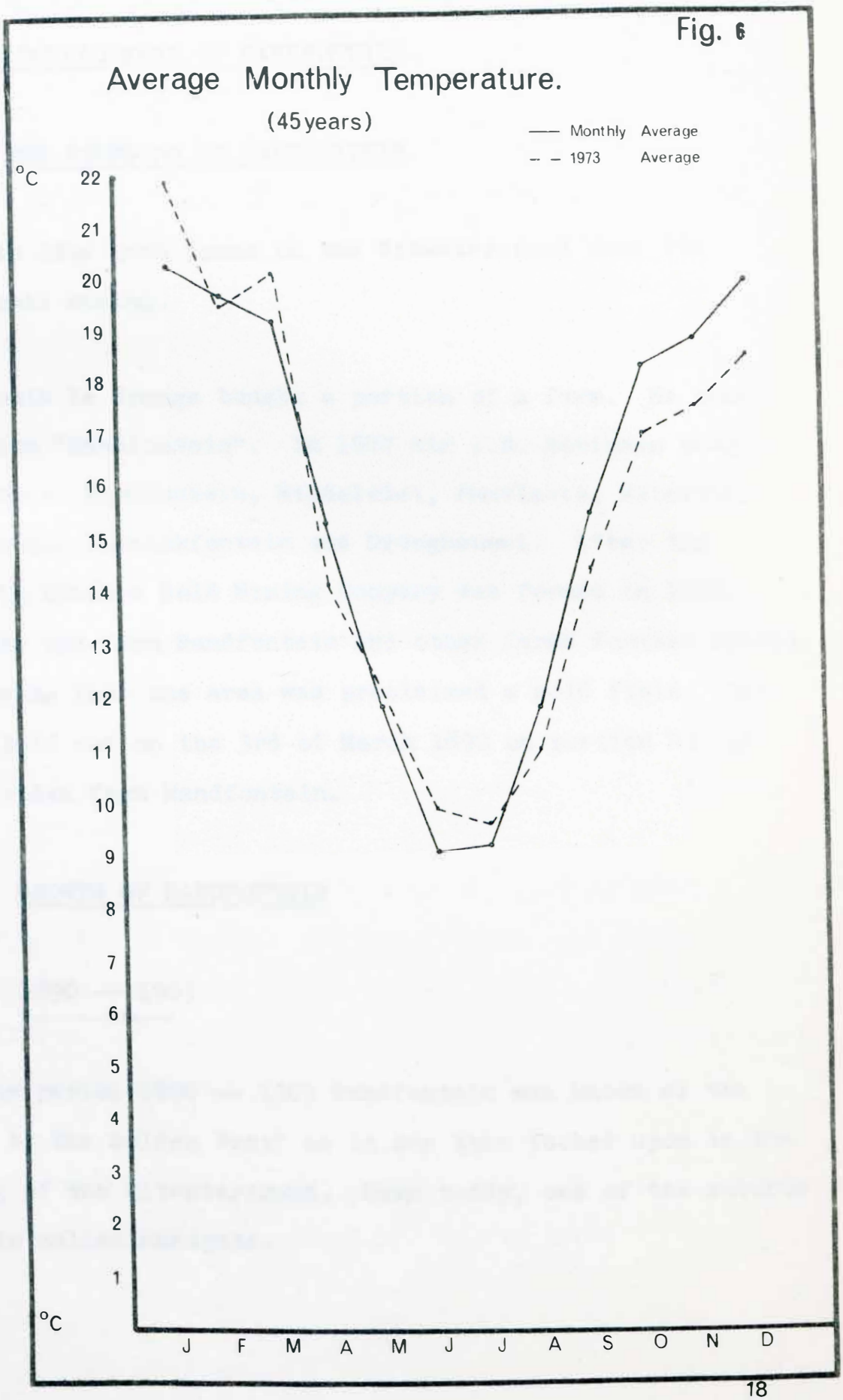
The autumn and spring temperatures are very much the same:

end of spring -	October	18,3°C	start of spring -	March	18,2°C
	September	15,5°C		April	15,3°C
	August	11,8°C		May	11,8°C

The average yearly temperature is 15,7°C. Altitude is the most important factor affecting the temperature of Randfontein. Randfontein, being on the Highveld, has its temperature moderated by the altitude (summers are cooler and winters comparatively cold).

The graph (Figure 6) shows the average monthly temperature and the average monthly temperature for 1973.

Fig. 6


Average Monthly Temperature.
(45 years)
—— Monthly Average
– – 1973 Average
°C
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
°C
J F M A M J J A S O N D

CHAPTER 3

HISTORICAL DEVELOPMENT OF RANDFONTEIN

3.1 THE FOUNDING OF RANDFONTEIN

Randfontein like most towns on the Witwatersrand owes its birth to gold mining.

In 1859 Louis le Grange bought a portion of a farm. He named this portion "Randfontein". In 1877 Sir J.B. Robinson bought seven farms:- Randfontein, Middelvlei, Panvlakte, Waterval, Uitvalfontein, Gemsbokfontein and Droogheuwel. After the Randfontein Estates Gold Mining Company was formed in 1889, they bought the farm Randfontein and other farms further afield. The following year the area was proclaimed a gold field. The town was laid out on the 3rd of March 1890 on portion No. 11 of the divided farm Randfontein.

3.2 GROWTH OF RANDFONTEIN

3.2.1 1890 — 1903

During the period 1890 — 1903 Randfontein was known as the "Gateway to the Golden West" as it was then looked upon as the beginning of the Witwatersrand. Even today, one of the suburbs ~~of town~~ is called Randgate.

The first White miners came from overseas countries: Cornwall, Australia, U.S.A. and various European countries. The largest contribution probably came from Cornwall.

On the 3rd May 1896 the railway line through the West Rand to Randfontein was completed and on the 11th of January 1897 extended to Potchefstroom.

3.2.2 1903 — 1928

From 1903 to 1928 Randfontein was part of the Krugersdorp Municipal Area.

During 1904 — 1906, because of unsatisfactory Bantu labour, about 3 000 Chinese labourers were employed at the Randfontein North Gold Mining Company.

Randgate was proclaimed in 1912 and consisted of 1 011 stands.

Randfontein Townships was proclaimed on the 29th December 1920 and consisted of 773 stands. The total White population of Krugersdorp Municipal Area, as reflected by the 1926 census, numbered 14 255, of which 3 271 — being 22½% of the total — belonged to the Randfontein area.

On the 27th August 1927, a petition signed by 1080 residents of Randfontein was forwarded to the Administrator.

This petition urged the separation of Randfontein from the Krugersdorp Municipal Area and the founding of a separate municipality for Randfontein. Mr. J. Young was appointed the Commissioner for the inquiry. The findings of the inquiry were that Randfontein should be constituted as a separate municipality. On the 11th September 1928 the findings of the inquiry were made effective. The municipality was to have a total area of 43 square miles. On the 1st January 1929 Randfontein achieved independent municipal status and a new town was born on the West Rand.

3.2.3 1929 — 1948

On the 1st January 1929 Randfontein achieved municipal status. Following a petition from registered owners of the farms Rietvlei No. 113, Witpoortjie No. 44, and Vlakfontein No. 35, these farms were excised from Randfontein. But, upon application of the Council of Randfontein, partitions of the farm Elandsvlei and Droogheuwel were retained. As a result of the inclusion of some and excision of other areas, the Randfontein municipal area was reduced from 43 square miles to 19 square miles. Another partition in August 1940 for the extension of the municipal boundaries by the inclusion of a number of farms, increased the municipal area of Randfontein from 19 to 56 square miles.

The area of Randfontein called Porges, can be traced back to

the French origin. From the earliest days of mining on the Witwatersrand, the Paris Bourse helped to provide capital for the development of the mines. A French financier named Porges was largely instrumental in raising money to finance the Porges (Randfontein) Gold Mining Company.

Stands could be bought by the mines in the present Homelake residential area and houses started going up in about 1936.

Mine houses were built in the area which is now Greenhills but it was proclaimed a residential area. Large areas of the Gold Mining Company ground which carried no minerals were sold for township and industrial purposes.

In 1938 the railway line from Randfontein to the East Rand was electrified. Until 1948 Randfontein fell under the jurisdiction of the magistrate of Krugersdorp. After 1948 Randfontein was declared a magisterial district with an area of 520 square miles.

3.2.4 1948 TO THE PRESENT DAY

Greenhills was proclaimed a residential area and in 1950 — 1951 stands were advertised.

In August 1951 the railway line from Randfontein to Welverdiend was electrified. The proclaimed industrial area comprises 145

hectares and a further 112 hectares are planned. In 1958 102 morgen was proclaimed as an extension to the original indus= trial area.

In 1965 the Town Council passed more than R2 000 000 worth of building plans compared to R1 300 000 during the previous year. In the same year R257 665 of the above figure was spent on ex= tensions to existing factories and R114 000 on four new fac= tories in the town.

Gold mining has played an important part in the history of Randfontein. Though Randfontein Estates Gold Mining Company still has productive shafts, the fact that its employment figures in 1966 had dropped by 50% during the previous four years, is an indication that gold mining is on the decline. Because of this tendency the Town Council is concentrating on the industrial development of the town.

There has however been a revival in the gold industry. Because of new mining methods and because of the sudden interest of countries in gold, the new gold prices make it worth while to reopen old mines. In ~~the last two years~~ new shafts have been sunk near Randfontein. Datums ?

New residential areas were proclaimed — Westergloor, Finsbury and extensions to Greenhills. Areas soon to be proclaimed are Culemborg Park and Helikon Park. Toekomsrus, a new coloured

township, has also been proclaimed. The planned housing should accommodate 7 000 Coloureds and the Coloureds will help the industrial development of Randfontein.

3.3 THE DEVELOPMENT OF MINING

Up to the present time most of the development of Randfontein was synonymous with the growth of the Gold Mining Industry. But the decline of the mining industry in the Randfontein area during recent years has acted as an incentive to the Town Council in concentrating on the industrial development of the town as the logical substitute to gold mining.

3.3.1 GOLD

Sir J.B. Robinson bought the farm Randfontein in 1877 and in April 1889 the Randfontein Estates Gold Mining Company was registered. This seemed, for the Johannesburg area, a very ambitious project at the time. The mine's capital was £2 000 000 in £1 shares, of which the vendors recieved 1 809 000 shares in exchange for the seven farms which were handed over to the company. One-hundred-thousand shares were taken up by the underwriters and the other 91 000 were sold at a premium.

Because of the high concentration of Cornish mines in South Africa at that time, mining methods were predominantly similar to those used in the South of England.

The Randfontein Estates Gold Mining Company Limited falls within the municipal area on the north-eastern border (see Figure 14). On the southern boundary of the municipal area are the gold mines known as the Far West Rand (Venterspost, Libanon, Blyvooruitzicht and West Driefontein). On the north-eastern boundary the West Rand Consolidated Mines are found.

In November 1917 Sir J.B. Robinson agreed to hand Randfontein Estates over to the Johannesburg Consolidated Investment Company for the sum of £4 500 000. (The J.C.I. was at the time represented by Solly Joel who acted on behalf of the Barnato Brothers).

Randfontein Estates milled a greater tonnage of ore than any other gold mine. It has also produced more gold than any other individual property since the start of the gold mining industry in 1886. This mine, over a period of several decades, produced more than 20 million ounces of gold. At the height of its prosperity it could mill ore at the rate of more than 400 000 tons per month. In 1939 it reached a record milling tonnage of 4 679 000 tons of ore.

During September 1931 Britain left the gold standard, South Africa did not follow. There was an immediate slump in the countries reserves, agriculture and industry and South Africa was forced to follow Britain in December 1932. As a result the Johannesburg Stock Exchange experienced the biggest ever boom in gold shares. There were mines which were nearing their end,

but due to the new gold prices, these mines were saved. Low grade ore could now be mined because of the new gold price of £7-2s-0d an ounce. Randfontein Estates benefited immediately. The capacity of the reduction works of the mine was increased so that it could handle 3 700 000 tons a year and in 1933 4 000 000 tons were handled. A new peak of prosperity was reached by Randfontein Estates between 1932 and 1934 when the mine's distributable profits doubled.

In 1957 33 boreholes were sunk on the farms Jachtsfontein, Waterpan and Modderfontein, 28 km to the south of Randfontein. Gold was found and in 1959 the Western Areas Gold Mining Company Limited was formed. Shaft sinking began in 1960 and production started in 1961. The reduction works at Randfontein Estates was used. Since then a reduction plant has been erected at Western Areas.

The new Cooke section, 8 km from Randfontein Estates, will start production in 1974. This section will give new life to Randfontein Estates because the old reduction works and other surface facilities from the old mine will be used by the new mines. The result will be a considerable reduction in capital. (For the positions of the mines see Figure14 showing the location of the mines in the municipal area).

3.3.2 URANIUM

The West Rand Consolidated Mining Company became the first mine

to produce uranium in South Africa. The late dr. D.F. Malan performed the opening ceremony on the 8th of October 1952. In the same year Randfontein Estates was also accepted as a ura= nium producer. This prolonged the life of the mine. Uranium became the primary product and gold the by-product. This accounted for the greater part of the company's revenue. Rand= fontein Estates become the biggest uranium producer in South Africa. During 1958 the mine treated 1 870 000 tons of ore and produced 1 870 000 pounds of uranium oxide with a market value of £8 000 000.

The mine's uranium contract expired at the end of 1965. There was a decline in the uranium market and the mine built up a stock pile from which yearly sales are made, depending on the demand.

3.4 GEOLOGICAL STRUCTURE

3.4.1 THE EARLY PERIOD

There are a few theories as to the manner in which the typical conglomerate formation of the Witwatersrand came to be placed in position:

(i) Glacial theory — during the glacial period a large river flowed down from a north-western direction, passing close to present day Randfontein, then turning due east to flow over what is now the extreme

Southern Transvaal. The present Witwatersrand formed its northern bank and along this were deposited the gold covered pebbles, etc., which form the conglomerate. Proof of this, it was held, lay in the patchy formation of the gold deposits in what is known as the Nigel Reef on the Far East Rand.

(ii) The Witwatersrand formed the shore of a sea that swept around in the shape of a great crescent along the Witwatersrand and around in a southerly direction towards Klerksdorp, curving again through the Free State and so out to open water.

(iii) This theory combines the above two, it holds that a large river flowed from the north through a delta into a huge lake. The gold bearing pebbles were deposited in the delta. Because of emergence, the granites were forced upwards to form the present day Rand. Bron?

Exploration work tended to concentrate on the Far East Rand and expansion was rapid. The reason for this was that a fault which cuts across the Main Reef had flung all the Reefs out of series and caused a blank spot. Randfontein was on the western limit of the gold area for the Rand. When exploration took place, besides gold, porous dolomite formations, which were filled with water, were discovered. In those days it was considered impossible to sink a shaft in such conditions. But as mining methods improved mines were opened up to the south of

Randfontein. To-day, stretching in an almost unbroken line from Randfontein to the little siding of Gatsrand, a distance equivalent to the area from Krugersdorp to Brakpan, lies a new goldfield.

3.4.2 THE GEOLOGY OF THE RANDFONTEIN AREA

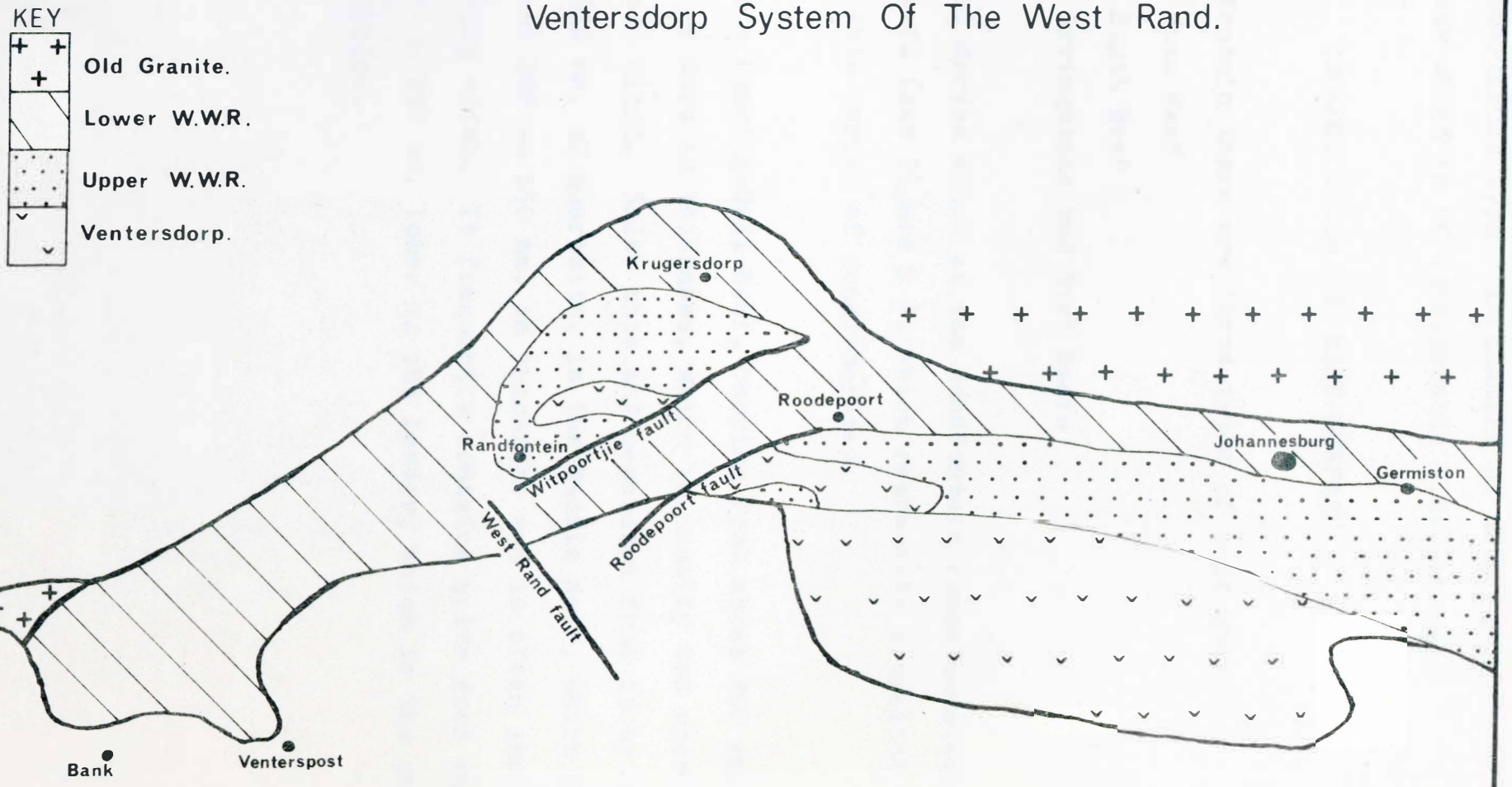
The Jukskei granite dips at comparatively high angles towards the south. This is found especially in the Central Rand where the strata flattens out in depth towards the south and passes beneath the Ventersdorp lavas. This strata build-up in the area was the result of the watershed between streams flowing northward into the Limpopo River and south into the Vaal River.

This ridge (just below 1 830 m. above sea-level) is 60 km long and lies in an east-west direction with only one break. The name "Witwatersrand" could come from the whiteness of the quartzites along the northern escarpment. The belt which is several kilometres in width, changes direction and sinks beneath the Dolomite of the Wonderfontein Loop after passing Randfontein. The extention's dip is south-easterly beneath the covering, a fact that has been proved by deep drilling near Frederikstad which constitutes the Far West Rand. In this ex= tention the Upper Division has been mostly removed by pre-Ventersdorp erosion (see Figure 7).

Many strike faults traverse the beds on the West Rand, being

Fig. 1

Map Showing Distribution Of The Witwatersrand And Ventersdorp System Of The West Rand.



of the overthrust type. An example of this being the Witpoor=tjie Break which is of considerable displacement.

3.4.3 GEOLOGY BELOW THE MINE SURFACE

At Randfontein there are three types of Reef mined:

(i) Main Reef

(ii) South Reef

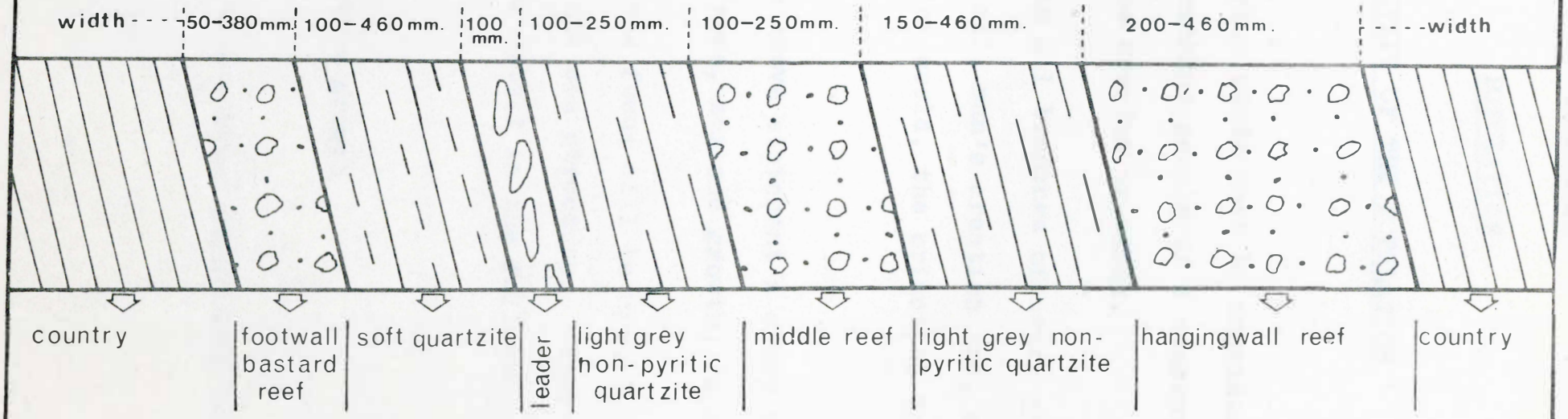
(iii) Livingstone and Bird Reefs

A typical Series mined at the Randfontein mines consists of three reefs (see Figure 8), which represents a typical section through this series of conglomerates.

There is a Hanging-Wall Reef, varying from about 200 mm. up to 450 mm. or more in thickness, which is usually too poor to work and is not mined. Below this and separated from it by some 150 — 450 mm. of quartzite, is the Middle Reef, which varies from about 100 — 250 mm. in thickness and is often included in the stoping width. It frequently contains quite good values. Some 100 — 250 mm. lower is the Leader, which is the pay reef of the series.

Fig. 8

DIAGRAMMATIC SECTION ACROSS THE RFT. LEADER SERIES, AS TYPICALLY DEVELOPED AT THE NORTH-AND ROBINSON-RFT. MINE .



C.B. HORWOOD; "GOLD DEPOSITS ON THE RAND."

CHAPTER 4

POPULATION

4.1 ANALYSIS OF THE POPULATION

Population in an urban study must be considered as very important because without people or a concentration of people, no urban area can be created or exist.

"Man is important in all branches of urban geography, since the city is, after all, man's creation and, nowadays, in large sections of the world, the principal home of man." (Murphy, 1966, pg.2).

In the light of the above statement a study of the structure of the population (race, sex and growth) is thus essential.

In this discussion the focus will be upon the two elements of population: growth and sex structure. Other aspects will be discussed in greater detail in the following section of the sociological study.

4.1.1 Population growth

The table below shows the total population for all the census years.

TABLE 3

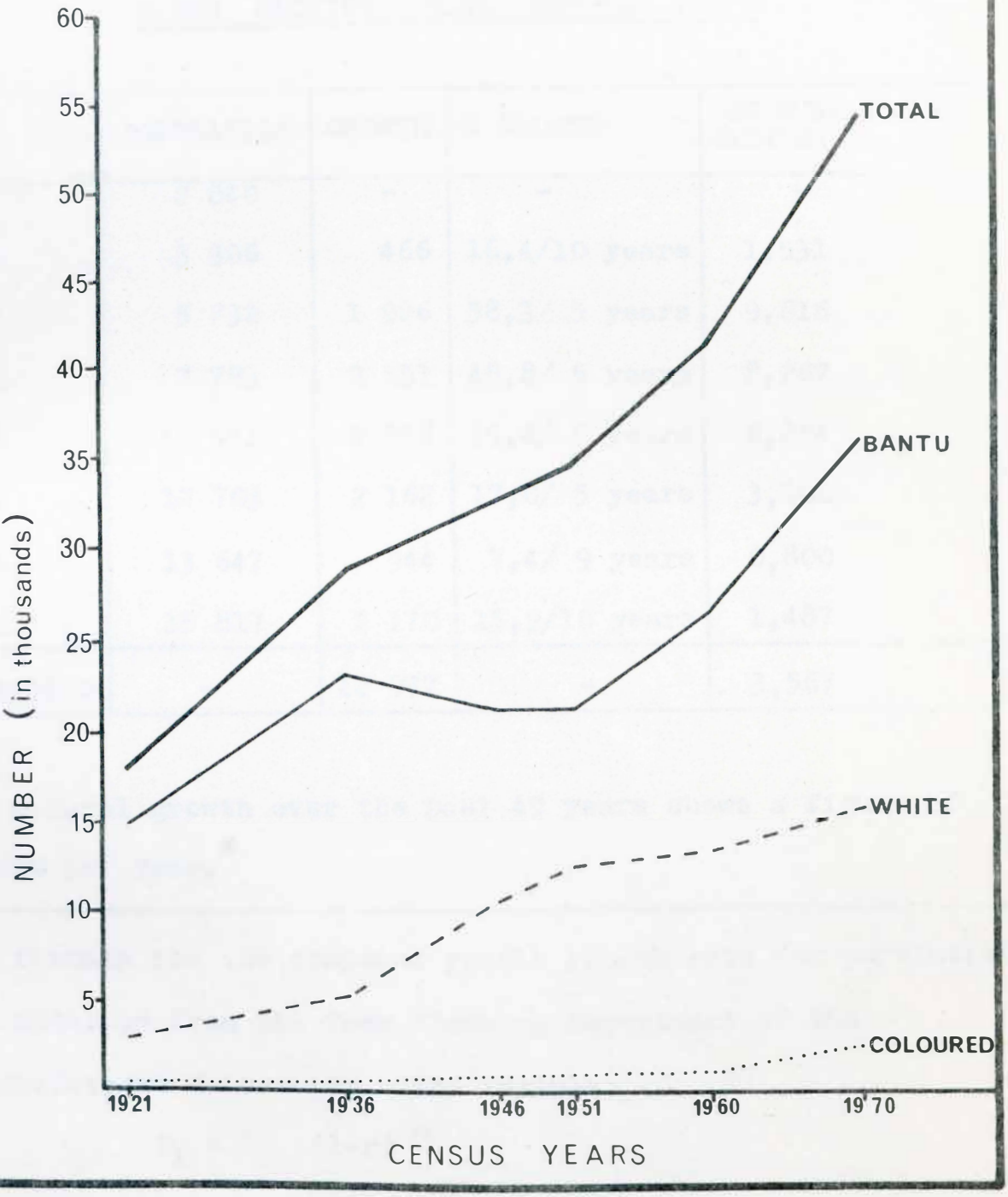
TABLE SHOWING POPULATION GROWTH

YEAR	WHITE	% OF TOTAL	BANTU	% OF TOTAL	COLOURED	% OF TOTAL	TOTAL
1921	2 840	15,8	14 942	82,9	238	1,3	18 020
1936	5 232	18,2	23 216	80,7	314	1,1	28 762
1946	10 541	32,4	21 332	65,7	625	1,9	32 498
1951	12 703	36,6	21 209	61,1	800	2,3	34 712
1960	13 647	32,9	26 752	64,6	1 043	2,5	41 442
1970	15 817	29,1	36 145	66,4	2 449	4,5	54 411

The table and figure both reflect the fact that there has always been a steady increase in the total population of Randfontein. There are slight exceptions; the Coloureds and Asiatics. In the case of the Coloureds the doubling between 1960 - 1970 is the result of the resettling of Coloureds from surrounding areas in Randfontein. The total Asiatic population is so small that even if it has more than doubled in ten years it means an increase of only 87 in 10 years. There was a decrease in the Bantu population from 1936 - 1946 (1884) and another slight decrease between 1946 - 1951 (123).

Figure 9

POPULATION GROWTH FOR RANDFONTEIN



White

TABLE 4

TABLE SHOWING WHITE GROWTH RATES

YEAR	POPULATION	GROWTH	% GROWTH	COMPOUND YEARLY GROWTH
1921	2 840	-	-	-
1931	3 306	466	16,4/10 years	1,531
1936	5 232	1 926	58,3/ 5 years	9,616
1941	7 783	2 551	48,8/ 5 years	8,267
1946	10 541	2 758	35,4/ 5 years	6,254
1951	12 703	2 162	17,0/ 5 years	3,802
1960	13 647	944	7,4/ 9 years	0,800
1970	15 817	2 170	15,9/10 years	1,487
1921-1970	-	12 977	-	3,567

The natural growth over the past 49 years shows a figure of 3,567% per year.*

---

* The formula for the compound yearly growth rate for population was obtained from the Town Planning Department of the Potchefstroom University. The formula:

$$P_1 = P_0 \ (1+r)^n$$

P_0 = The first census date

P_1 = The second census date

n = Number of years between 2 census

r = the unknown (the growth rate)

Between the years 1931 to 1946 there was an above-average increase in population. Between 1931 and 1936 the growth was 9,616%; between 1936 and 1941 the growth rate was 8,267% and between 1941 and 1946 the growth rate was 6,254%. The reason may be sought in the fact that once Randfontein achieved municipal status in 1929 and new residential areas were proclaimed, workers (mostly miners) from the surrounding areas came to live in Randfontein. The mines attracted many workers during this time when the depression and droughts of the 1930's were experienced. Between the years 1951 and 1960 there was a slight increase in population (0,800% per year).

It is obvious that the average figure of 3,567% for the 49 years cannot be considered a true reflection of future population growth because the determinate conditions mentioned above are of an irregular nature.

Bantu

TABLE 5

TABLE SHOWING BANTU GROWTH RATES

YEAR	POPULATION	GROWTH	% GROWTH	COMPOUND YEARLY GROWTH
1921	14 942	-	-	-
1936	23 216	8 274	55,4/15 years	9,213
1946	21 332	-1 884	-8,1/10 years	-0,843
1951	21 209	-123	-0,6/ 5 years	-0,116
1960	26 752	5 543	26,1/ 9 years	2,613
1970	36 145	9 393	35,1/10 years	3,055
1921-1970	-	21 203	-	1,819

The Bantu population shows a low growth rate of 1,819% between the years 1936 and 1970. A negative growth rate for the two census years, 1946 and 1951 is shown. There is no apparent reason for this except perhaps that there were no large economic developments during this time. The occurence of the 2nd World War and the return of the economy to a natural state after the war, could also be considered as a possible reason.

Coloured

Randfontein has always had a small Coloured population. There is a new legislation that Randfontein is a resettlement area for Coloured people. The increase in the population started after 1960.

TABLE 6

TABLE SHOWING COLOURED GROWTH RATES

YEAR	POPULATION	GROWTH	% GROWTH	COMPOUND YEARLY GROWTH
1921	238	-	-	-
1936	314	76	31,9/15 years	1,865
1946	625	311	99,1/10 years	7,126
1951	800	175	28,0/ 5 years	5,061
1960	1 043	243	30,4/ 9 years	2,991
1970	2 449	1 406	134,8/10 years	8,911
1921-1970	-	2 211	-	4,872

The table shows a growth rate of 4,872% per year. Since 1970 the Coloured population has increased to ± 5 500 in 1975. They live in the new Coloured Township of Toekomsrus.

Asiatics

Randfontein has a small Asiatic community. There is an Asiatic Township Azaadville just outside the municipality's eastern boundary in the Krugersdorp Municipal area. Most of the Asiatics stay next to their shops in the Randfontein Municipal area. Their shops are all found in the smallholding areas.

TABLE 7

TABLE SHOWING ASIATIC GROWTH RATES

YEAR	POPULATION	GROWTH	% GROWTH	COMPOUND YEARLY GROWTH
1921	6	-	-	-
1936	1	-5	-83,3/15 years	11,259
1946	25	24	2400/ 10 years	37,973
1951	52	27	108/ 5 years	15,774
1960	57	5	9,6/ 9 years	1,025
1970	144	87	152,6/10 years	9,711
1921-1970	-	143	-	6,700

The Asiatics have a growth rate of 6,700% which is the highest for all the races. However this high figure does not reflect any phenomenal population changes because the Asiatic

population is so small.

All Races

If all races are considered together, Randfontein shows a population growth of 2,286%. The total population has always showed a steady growth rate from one census year to the next.

TABLE 8

TABLE SHOWING GROWTH RATES FOR ALL RACES.

YEAR	POPULATION	GROWTH	% GROWTH	COMPOUND YEARLY GROWTH
1921	18 026	-	-	-
1936	28 763	10 737	59,6/15 years	3,164
1946	32 523	3 760	13,1/10 years	1,236
1951	34 764	2 241	6,9/ 5 years	1,342
1960	41 499	6 735	19,4/ 9 years	1,987
1970	54 555	13 056	31,5/10 years	2,773
1921-1970	-	36 523	-	2,286

4.1.2 Sex Structure of the population

A brief study of the sex structure is necessary in order to determine what influence each sex group can have on the economic development of the town and also on the residential development.

TABLE 9

TABLE SHOWING SEX STRUCTURE

RACE	SEX	1921	1936	1946	1951	1960	1970
WHITE	Male	1 559	2 935	5 416	6 506	7 015	7 911
	Female	1 281	2 297	5 125	6 197	6 632	7 906
	Total	2 840	5 232	10 541	12 703	13 647	15 817
BANTU	Male	13 575	20 296	15 934	15 256	18 062	20 386
	Female	1 367	2 920	5 398	5 953	8 690	15 759
	Total	14 942	23 216	21 332	21 209	26 752	36 145
COLOUREDS	Male	118	167	310	418	500	1 268
	Female	120	147	315	382	543	1 181
	Total	238	314	625	800	1 043	2 449
ASIATICS	Male	6	1	16	29	32	67
	Female	0	0	9	23	25	77
	Total	6	1	25	52	57	144
ALL RACES	Male	15 258	23 399	21 676	22 209	25 609	29 632
	Female	2 768	5 364	10 847	12 555	15 890	24 923
	Total	18 026	28 763	32 523	34 764	41 499	54 555

The ratio of male to female is worked out for 1970.

Race	Male	Female	Total	Male/Female Ratio
White	7 911	7 906	15 817	100:100
Bantu	20 386	15 759	36 145	100:73
Coloured	1 268	1 181	2 449	100:93
Asiatic	67	77	144	100:115
All Races	29 632	24 923	54 555	100:84

If the latest census figures are studied it will be noticed that there is a fairly even distribution between male and female. The only exception being the male Bantu group which is greater than the female group, but the males are easily absorbed into the industries and construction businesses. Single males are housed in hostels in the Bantu Townships. There is no immediate danger of an imbalance in the sex structure of all population groups.

In the White population the ratio of males to females is fairly constant. In all the census years there were fewer females than males. In 1970 there were only 5 males more than the total females, (7 911 males, 7 906 females) giving a ratio of 100:100.

According to the 1970 census the different residential areas of Randfontein had the following White population.

Residential area	Male	% of Total	Female	% of Total	Total
Greenhills	535	48,4	570	51,6	1 105
Homelake	1 036	49,8	1 045	50,2	2 081
Industrial Town	9	36,0	16	65,0	25
Randfontein	1 359	48,3	1 453	51,7	2 812
Randgate	935	50,1	932	49,9	1 867
Smallholdings	3 460	51,0	3 320	49,0	6 780
Total	7 334	50,0	7 336	50,0	14 670

As can be seen from the above table the ratio between male and female in each residential area is very nearly a 100:100 average.

The Bantu population for all census years shows a higher male total. This can be attributed to the fact that the Bantu males come to towns for work in factories and to learn trades. In 1970 the ratio was 20 386 males to 15 759 females i.e.4 627 more males (ratio 100:73).

The Coloured population shows a slight deviation. In 1921, 1946 and 1960 there were more females than males but the difference was a small one. The balance between male and female is fairly constant. In 1970 there were 1268 males to 1181 females, 87 more males (ratio 100:93).

The Asiatic population is very small. For all census years except 1970 there were more males than females. In 1970 the ratio was 67 males to 77 females i.e.10 more females (ratio 100:115).

4.2 A SOCIOLOGICAL STUDY OF THE RESIDENTIAL AREAS OF RANDFONTEIN

4.2.1 GENERAL

Questionnaires were supplied to all schools in Randfontein and given to pupils who:

(i) stayed in the municipal area;

(ii) were the oldest school-going child per family;

so that no duplication occured.

The questionnaires had to be filled in by means of crosses, figures or words (for a sample of the questionnaire refer to Appendix p239). Headmasters or teachers were not expected to control the return of questionnaires. A total of 955 was finally used as some had been incorrectly answered. The questionnaires reached a total of 4 821 inhabitants of Randfontein. (The total number of inhabitants per dwelling for each area was taken into account). The 1970 Official Sensus of the Randfontein Municipal area, shows a total White population of 7 897. The questionnaires thus reached 61% of the White population.

The results from the questionnaires will be discussed under each residential area. The occupations of the residents were divided into 10 main groups:

(i) All government, provincial and municipal sections.

(ii) Professional. (Attorney, Lawyer, Doctor, Dentist, Engineer, Geologist, Architect, Accountant, Chemist,

Surveyor, Minister and Teacher).

(iii) Mining. (Officials and miners).

(iv) Own Business. (also Directors).

(v) Tradesmen. (Bricklayer, Mechanic, Fitter and Turner, Plumber, Electrician, Carpenter and any other related trades).

(vi) Manager, Supervisor and Foreman.

(vii) Clerk and Typist.

(viii) Salesman and Saleswoman.

(ix) Other.(e.g. Storeman).

(x) None. (Widow, Housewife, Pensioner).

4.2.2 TOWN

4.2.2.1 Type of dwelling

A total of 151 questionnaires from the town area was received. Of this total, 10 came from flat dwellers (6,7%), 50 from rented houses (33,3%) and 91 from home owners (60%).

4.2.2.2 Occupation

A total of 145 answered this section. Of this total, mine-workers numbered the most, 42 (29%) (14 officials and 28 miners), followed by the tradesmen, 29 (20%). The other occupations are summarized in the following table:

TABLE SHOWING OCCUPATIONS

TYPE	NUMBER	PERCENTAGE
Govt., Prov., Mun.	17	11,7
Professional	12	8,2
Mining	42	29,0
Own Business	11	7,6
Tradesmen	29	20,0
Managers	10	6,9
Clerks, Typists	4	2,8
Salesmen/women	2	1,4
Other	8	5,5
None	10	6,9
TOTAL	145	100

4.2.2.3 Number of persons found in each dwelling

i) Total number of persons per dwelling

This question was answered in all the questionnaires. Five persons per dwelling was the most common (27,2%), followed by 4 persons per dwelling (21,8%). The table below summarizes this section.

TABLE SHOWING NUMBER OF PERSONS IN EACH DWELLING

NO. OF PERSONS FOUND IN EACH DWELLING	NO. OF DWELLINGS	PERCENTAGE	TOTAL NO. OF RESIDENTS
2	1	0,7	2
3	13	8,6	26
4	33	21,8	132
5	41	27,2	205

TABLE SHOWING NUMBER OF PERSONS IN EACH DWELLING (continued)

NO. OF PERSONS FOUND IN EACH DWELLING	NO. OF DWELLINGS	PERCENTAGE	TOTAL NO. OF RESIDENTS
6	29	19,2	174
7	18	11,9	126
8	9	6,0	72
9	4	2,6	36
10	3	2,0	30
TOTAL	151	100,0	803

ii) Number of employed persons per dwelling

Two employed persons per dwelling is the most common number (43%), followed by 1 employed person per dwelling (41,1%). The table below summarizes this section.

TABLE SHOWING NUMBER OF EMPLOYED PERSONS PER DWELLING

NO. EMPLOYED PER DWELLING	NO. OF DWELLINGS	PERCENTAGE
0	2	1,3
1	62	41,1
2	65	43,0
3	19	12,6
4	2	1,3
5	1	0,7
TOTAL	151	100,0

iii) Number of school-going persons per dwelling

Three persons per dwelling is the most usual number of persons still attending school (29,8%), followed by 2 persons per dwel= ling (25,5%). The table below summarizes this section.

TABLE SHOWING NUMBER OF SCHOOL-GOING PERSONS PER DWELLING

NO. OF SCHOOL-GOING PERSONS PER DWELLING	NO. OF DWELLINGS	PERCENTAGE
1	30	21,3
2	36	25,5
3	42	29,8
4	21	14,9
5	10	7,1
6	2	1,4
TOTAL	141	100,0

4.2.2.4 Age

The table below shows the age groups and the number of persons found in each of the age groups per dwelling. The last section of the table shows the number of persons possesing drivers licences.

The highest number is found in the 6 - 18 age group (397), followed by the 41 - 50 age group (123). The 31 - 40 age groups has the highest percentage possessing drivers licences 71,7%, followed by the 41 - 50 age group with 65,9%.

TABLE SHOWING AGE STRUCTURE

AGE GROUPS	NO. IN AGE GROUP	NO. POSSESSING DRIVERS LICENCE	% POSSESSING DRIVERS LICENCE
Under 6	46	0	0
6 - 18	397	34	8,6
19 - 30	67	32	47,8
31 - 40	120	86	71,7
41 - 50	123	81	65,9
51 - 60	42	26	61,9
Above 60	11	6	54,5

4.2.2.5 Vehicles

The table below shows the number and type of vehicles owned. Most people (81) own one car and 39 own two cars. This residential area will be approximately the living area of the middle income group.

TABLE SHOWING VEHICLES OWNED

NO. OF VEHICLES OWNED	NO. OF CARS	NO. OF BAKKIES	NO. OF HEAVY VEHICLES	NO. OF MOTOR-CYCLES
1	81	40	1	11
2	39	2	2	0
3	8	0	0	0
4	1	0	0	0

4.2.2.6 By whom general purchases are made

The highest percentage of purchases are made by the wife, 83,4%.

TABLE SHOWING BY WHOM PURCHASES ARE MADE

	NUMBER	PERCENTAGE
Husband	22	13,0
Wife	141	83,4
Children	6	3,6
TOTAL	169	100,0

4.2.2.7 Type of transport to shopping centres

The table below shows the type and the number using the type of transport to the shopping centres. The highest percentage is the car (52,2%), followed by walking (38,7%). Walking is comparatively high because the C.B.D. is found in the town area and near to most dwellings.

TABLE SHOWING TYPE OF TRANSPORT TO SHOPPING CENTRES

TYPE	NUMBER	PERCENTAGE
Car	97	52,2
Bus	9	4,8
Walking	72	38,7
Other	8	4,3
TOTAL	186	100,0

4.2.2.8 Bus Service

The table below summarizes the answers to the questions on this

section.

TABLE SHOWING USEFULNESS OF BUS SERVICES

	YES	%	NO	%	TOTAL
Is there a bus service near your home?	35	23,5	114	76,5	149
If yes, do you make use of it?	15	16,1	78	83,9	93
If no, would such a service be desirable?	35	28,0	90	72,0	125

From the table it can be seen that the majority do not have a bus service near their homes (76,5%). Only 16,1% make use of the existing bus service and 72% feel that a bus service is not necessary.

According to the questionnaires the bus service should be ope= rative on the following days:

DAY	MON.	TUES.	WED.	THURS.	FRI.	SAT.	SUN.
No. who requested	18	22	16	16	22	22	11

Most people requested that buses operate during peak hours each day: in the morning, lunch hours and late afternoon.

4.2.2.9 Where shopping is done

People who completed the questionnaire were asked to give a

summary of where they did their shopping.

The table shows that the residents of the town area do most of their shopping in the Randfontein shopping area which is the C.B.D. A comparatively high percentage buy clothing in Johannesburg (16,9%), and special gifts in Johannesburg (21,4%).

TABLE SHOWING BUYING HABITS

	FURNITURE	HARDWARE	GROCERIES	CLOTHING	SPECIAL GIFTS
Own residential area	21	19	25	23	20
Krugersdorp and West Rand towns	5	13	6	18	19
Randfontein	98	98	113	95	83
Johannesburg	13	7	12	28	34
Other	3	-	1	2	3

4.2.3 HOMELAKE

4.2.3.1 Type of dwelling

A total of 167 questionnaires was recieved from the Homelake residential area. Of this total, 4 came from flat dwellers (2,4%), 40 from rented houses (23,9%) and 123 participants owned their own houses (73,7%).

4.2.3.2 Occupation

A total of 160 answered this section. Of this total, tradesmen numbered the most, 38 (23,8%), followed by mineworkers, 29 (18,1%). The other occupations are summarized in the following table:

TABLE SHOWING OCCUPATIONS

TYPE	NUMBER	PERCENTAGE
Govt., Prov., Mun.	10	6,3
Professional	13	8,1
Mining	29	18,1
Own Business	8	5,0
Tradesmen	38	23,8
Managers	14	8,8
Clerks, Typists	20	12,5
Salesmen/women	6	3,7
Other	8	5,0
None	14	8,7
TOTAL	160	100,0

4.2.3.3 Number of persons found in each dwelling

i) Total number of persons per dwelling

This question was answered in all the questionnaires. Four persons per dwelling was the most common (24,6%), followed by 6 persons per dwelling (22,7%). The table below summarizes this section.

TABLE SHOWING NUMBER OF PERSONS IN EACH DWELLING

NO. OF PERSONS FOUND IN EACH DWELLING	NO. OF DWELLINGS	PERCENTAGE	TOTAL NO. OF RESIDENTS
2	1	0,6	2
3	16	9,6	48
4	41	24,6	~~82~~ 164
5	33	19,7	165
6	38	22,7	228
7	28	16,8	196
8	7	4,2	56
9	3	1,8	27
TOTAL	167	100,0	~~804~~ 886

ii) Number of employed persons per dwelling

One employed person per dwelling is the most common number (43,7%), followed by 2 persons per dwelling (35,3%). The table below summarizes this section.

TABLE SHOWING NUMBER OF EMPLOYED PERSONS PER DWELLING

NO. EMPLOYED PER DWELLING	NO. OF DWELLINGS	PERCENTAGE
0	10	6,0
1	73	43,7
2	59	35,3
3	12	7,2
4	11	6,6
5	2	1,2
TOTAL	167	100,0

iii) Number of school-going persons per dwelling

Two school-going persons per dwelling is the most common number (33,5%), followed by 1 person per dwelling (30,5%). The table below summarizes this section.

TABLE SHOWING NUMBER OF SCHOOL-GOING PERSONS PER DWELLING

NO. OF SCHOOL-GOING PERSONS PER DWELLING	NO. OF DWELLINGS	PERCENTAGE
1	51	30,5
2	56	33,5
3	26	15,6
4	30	18,0
5	3	1,8
6	1	0,6
TOTAL	167	100,0

4.2.3.4 Age

The table below shows the age groups and the number of persons found in each of the age groups. The last section of the table shows the number of persons possessing drivers licences. The highest number is found in the 6 - 18 age group (392), followed by the 31 - 40 age group (139). The 51 - 60 age group has the highest percentage possessing drivers licences (89,2%), followed by the 31 - 40 age group with 80,6%.

TABLE SHOWING AGE STRUCTURE

AGE GROUPS	NO. IN AGE GROUP	NO. POSSESSING DRIVERS LICENCE	% POSSESSING DRIVERS LICENCE
Under 6	74	0	0
6 - 18	392	10	2,6
19 - 30	86	47	54,7
31 - 40	139	112	80,6
41 - 50	118	93	78,8
51 - 60	37	33	89,2
Above 60	22	9	40,9

4.2.3.5 Vehicles

The table below shows the number and type of vehicles owned. Most people (85) own 1 car and 53 own two cars. This residen= tial area will be approximately the middle income group but slightly higher than the town area.

TABLE SHOWING VEHICLES OWNED

NO. OF VEHICLES OWNED	NO. OF CARS	NO. OF BAKKIES	NO. OF HEAVY VEHICLES	NO. OF MOTOR-CYCLES
1	85	39	3	6
2	53	9	1	2
3	2	2	1	0
4	0	0	0	0

4.2.3.6 By whom general purchases are made

The highest percentage of purchases are made by the wife, 82,1%.

TABLE SHOWING BY WHOM PURCHASES ARE MADE

	NUMBER	PERCENTAGE
Husband	22	11,6
Wife	156	82,1
Children	12	6,3
TOTAL	190	100,0

4.2.3.7 Type of transport to shopping centres

The table below shows the type and the number using the type of transport to the shopping centres. The highest percentage is the car (73,5%), followed by walking (26,5%). There is no bus service through Homelake. The car percentage is high because the C.B.D. is far from the north, south and west sides of Home= lake.

TABLE SHOWING TYPE OF TRANSPORT TO SHOPPING CENTRES

TYPE	NUMBER	PERCENTAGE
Car	136	73,5
Bus	0	—
Walking	49	26,5
Other	0	—
TOTAL	185	100,0

4.2.3.8 Bus Service

The table below summarizes the answers to the questions on this section.

TABLE SHOWING USEFULNESS OF BUS SERVICES

	YES	%	NO	%	TOTAL
Is there a bus service near your home?	25	15,1	141	84,9	166
If yes, do you make use of it?	16	18,0	73	82,0	89
If no, would such a service be desirable?	57	38,3	92	61,7	149

From the table it can be seen that the majority do not have a bus service near their home (84,9%). Only 18% make use of the existing bus service and 61,7% feel that a bus service is not necessary.

According to the questionnaires the bus service should be operative on the following days:

DAY	MON.	TUES.	WED.	THURS.	FRI.	SAT.	SUN.
No. who requested	25	25	33	23	31	37	14

The high totals of Friday and Saturday are understandable because these two days are the normal end of the week shopping days. Wednesday has a high total because of mid-week shopping. Most people requested the buses to operate during peak times of each day: in the morning, lunch hours and late afternoon.

4.2.3.9 Where shopping is done

People who completed the questionnaires were asked to give a summary of where they did their shopping.

The table shows that the residents of Homelake do most of their shopping in Randfontein's shopping centre. As was the case with the town area shopping for clothing (16,2%) and special gifts (26,5%) is done in Johannesburg.

TABLE SHOWING BUYING HABITS

	FURNI= TURE	HARD= WARE	GROCERIES	CLOTHING	SPECIAL GIFTS
Own residential area	11	11	21	10	7
Krugersdorp and West Rand towns	10	8	9	27	10
Randfontein	128	131	135	123	113
Johannesburg	17	8	5	31	48
Other	5	3	2	1	3

4.2.4 GREENHILLS

4.2.4.1 Type of dwelling

A total of 252 questionnaires from Greenhills residential area was recieved. Of this total, 10 came from flat dwellers (4,0%), 25 from rented houses (9,9%) and 217 from home owners (86,1%).

The reason for the high percentage of people owning their own homes is that this is a residential area for the higher income group.

4.2.4.2 Occupation

A total of 248 answered this section. Of this total, profes= sional occupations numbered the most, 58 (23,4%), followed by tradesmen, 41 (16,5%). The other occupations are summarized in the following table:

TABLE SHOWING OCCUPATIONS

TYPE	NUMBER	PERCENTAGE
Govt., Prov., Mun.	22	8,9
Professional	58	23,4
Mining	33	13,3
Own Business	24	9,7
Tradesmen	41	16,5
Managers	29	11,7
Clerks, Typists	20	8,1
Salesmen/women	18	7,2
Other	2	0,8
None	1	0,4
TOTAL	248	100,0

Greenhills seems to be the higher income group's residential area because of the high percentage of professional people.

4.2.4.3 Number of persons per dwelling

i) Total number of persons per dwelling

This question was answered in all the questionnaires. Five persons per dwelling was the most common number (34,5%), followed by 4 persons per dwelling (30,2%). The table below summarizes this section.

TABLE SHOWING NUMBER OF PERSONS IN EACH DWELLING

NO. OF PERSONS FOUND IN EACH DWELLING	NO. OF DWELLINGS	PERCENTAGE	TOTAL NO. OF RESIDENTS
2	1	0,4	2
3	26	10,3	78
4	76	30,2	304
5	87	34,5	435
6	42	16,7	252
7	20	7,9	140
TOTAL	252	100,0	1 211

ii) Number of employed persons per dwelling

One employed person per dwelling is the most common number (54,3%), followed by 2 persons per dwelling (38,9%). The table below summarizes this section.

TABLE SHOWING NUMBER OF EMPLOYED PERSONS PER DWELLING

NO. EMPLOYED PER DWELLING	NO. OF DWELLINGS	PERCENTAGE
0	1	0,4
1	137	54,3
2	98	38,9
3	12	4,8
4	4	1,6
TOTAL	252	100,0

iii) Number of school-going persons per dwelling

Two school-going persons per dwelling is the most common number (41,3%), followed by 1 person per dwelling (29,8%). The table below summarizes this section.

TABLE SHOWING NUMBER OF SCHOOL-GOING PERSONS PER DWELLING

NO. OF SCHOOL-GOING PERSONS PER DWELLING	NO. OF DWELLINGS	PERCENTAGE
1	75	29,8
2	104	41,3
3	50	19,8
4	18	7,1
5	5	2,0
TOTAL	252	100,0

4.2.4.4 Age

The table below shows the age groups and the number of persons found in each of the age groups per dwelling. The last section of the table shows the number of persons possessing drivers licences.

TABLE SHOWING AGE STRUCTURE

AGE GROUPS	NO. IN AGE GROUP	NO. POSSESSING DRIVERS LICENCE	% POSSESSING DRIVERS LICENCE
Under 6	121	0	—
6 - 18	535	23	4,3
19 - 30	92	83	90,2
31 - 40	261	255	97,7
41 - 50	118	111	94,1
51 - 60	31	24	77,4
Above 60	11	5	45,5

The highest number is found in the 6 - 18 group (535), followed by the 31 - 40 age group (261). Very high percentages are found in the drivers licence column; 31 - 40 age group 97,7%, 41 - 50 age group 94,1% and the 19 - 30 age group 90,2%. This can be linked with the number of cars owned. This again shows the higher status of Greenhills.

4.2.4.5 Vehicles

The table below shows the number and type of vehicles owned.

It will be noticed from the table that there are more people

(117) owning 2 cars than the people (115) who own 1 car. This is mainly due to the fact that this residential area has more residents who are financially better off than other residential areas.

TABLE SHOWING VEHICLES OWNED

NO. OF VEHICLES OWNED	NO. OF CARS	NO. OF BAKKIES	NO. OF HEAVY VEHICLES	NO. OF MOTOR-CYCLES
1	115	55	3	10
2	117	4	-	-
3	11	3	-	-
4	2	-	-	-

4.2.4.6 By whom general purchases are made

The highest percentage of purchases are made by the wife (82,8%). This high percentage is also influenced by the large number of housewives who have a car of their own.

TABLE SHOWING BY WHOM PURCHASES ARE MADE

	NUMBER	PERCENTAGE
Husband	38	14,5
Wife	217	82,8
Children	7	2,7
TOTAL	262	100,0

4.2.4.7 Type of transport to shopping centres

The table below shows the type and the number using the type of transport to the shopping centres. The highest percentage is the car (89,0%), followed by walking (6,2%). There is no bus service through Greenhills. The car percentage is high because the C.B.D. is far from this residential area (approximately 2,5 km. from the nearest point).

TABLE SHOWING TYPE OF TRANSPORT TO SHOPPING CENTRES

TYPE	NUMBER	PERCENTAGE
Car	243	89,0
Bus	4	1,5
Walking	17	6,2
Other	9	3,3
TOTAL	273	100,0

4.2.4.8 Bus Service

The table below summarizes the answers to the questions on this section.

From the table it can be seen that the majority do not have a bus service near their home (82,8%). Only 21,5% make use of the existing bus service and 52,6% feel that a bus service is not necessary.

TABLE SHOWING USEFULNESS OF BUS SERVICES

	YES	%	NO	%	TOTAL
Is there a bus service near your home?	42	17,2	202	82,8	244
If yes, do you make use of it?	31	21,5	113	78,5	144
If no, would such a service be desirable?	102	47,4	113	52,6	215

According to the questionnaires the bus service should be operative on the following days:

DAY	MON.	TUES.	WED.	THURS.	FRI.	SAT.	SUN.
No. who requested	60	61	78	55	71	75	22

Wednesday and Saturday are the two most favourable days. Most people requested that buses operate during peak times each day: in the morning, lunch hours and late afternoon.

4.2.4.9 Where shopping is done

People who completed the questionnaires were asked to give a summary of where they did their shopping. Most of the shopping is done in Randfontein with a high percentage of furniture bought in Johannesburg (30,9%).

A high percentage of clothing is bought in West Rand towns (17,4%) and Johannesburg (28,7%). The reason for this is that

larger reef towns and Johannesburg have a wider range in fashions. Clothing shops in Randfontein tend to be more ex= pensive than the above areas. The same applies for special gifts. (West Rand towns (13,5%) and Johannesburg (30%)).

TABLE SHOWING BUYING HABITS

	FURNI= TURE	HARD= WARE	GROCERIES	CLOTHING	SPECIAL GIFTS
Own residential area	8	11	20	5	7
Krugersdorp and West Rand towns	24	15	20	60	40
Randfontein	154	209	218	178	158
Johannesburg	83	19	14	99	89
Other	3	2	1	3	3

4.2.5 RANDGATE

4.2.5.1 Type of dwelling

A total of 175 questionnaires from Randgate residential area was received. Of this total, 1 came from flat dwellers (0,6%), 31 from rented houses (17,7%) and 143 from home owners (81,7%). There are no blocks of flats in Randgate, the one question= naire that was received from a flat dweller could be a private flat attached to a house.

4.2.5.2 Occupation

A total of 166 answered this section. Of this total, tradesmen numbered the most, 56 (33,8%), followed by mining, 35 (21,1%). The other occupations are summarized in the following table:

TABLE SHOWING OCCUPATIONS

TYPE	NUMBER	PERCENTAGE
Govt., Prov., Mun.	16	9,6
Professional	5	3,1
Mining	35	21,1
Own Business	7	4,2
Tradesmen	56	33,8
Managers	7	4,2
Clerks, Typists	9	5,4
Salesmen/women	6	3,6
Other	14	8,4
None	11	6,6
TOTAL	166	100,0

Randgate seems to be a middle to lower income group's residen= tial area as indicated by the high percentage of tradesmen and miners. There is a low percentage of professional people (3,1%), people who own their own business (4,2%) and managers (4,2%).

4.2.5.3 Number of persons per dwelling

i) Total number of persons per dwelling

This question was answered in all the questionnaires. Five

persons per dwelling was the most common number (29,1%), fol= lowed by 6 persons per dwelling (21,7%). The table below sum= marizes this section.

TABLE SHOWING NUMBER OF PERSONS IN EACH DWELLING

NO. OF PERSONS FOUND IN EACH DWELLING	NO. OF DWELLINGS	PERCENTAGE	TOTAL NO. OF RESIDENTS
2	3	1,7	6
3	12	6,9	36
4	33	18,9	132
5	51	29,1	102
6	38	21,7	228
7	18	10,3	126
8	13	7,4	104
9	5	2,9	45
10	—	—	—
11	2	1,1	22
TOTAL	175	100,0	801

ii) Number of employed persons per dwelling

One employed person per dwelling is the most common number (46,8%), followed by 2 persons per dwelling (40,6%). The table below summarizes this section.

TABLE SHOWING NUMBER OF EMPLOYED PERSONS PER DWELLING

NO. EMPLOYED PER DWELLING	NO. OF DWELLINGS	PERCENTAGE
0	4	2,3
1	82	46,8

TABLE SHOWING NUMBER OF EMPLOYED PERSONS PER DWELLING (cont.)

NO. EMPLOYED PER DWELLING	NO. OF DWELLINGS	PERCENTAGE
2	71	40,6
3	13	7,4
4	5	2,9
TOTAL	175	100,0

iii) Number of school-going persons per dwelling

One school-going person per dwelling is the most common number (35,5%), followed by 3 persons per dwelling (26,3%).

TABLE SHOWING NUMBER OF SCHOOL-GOING PERSONS PER DWELLING

NO. OF SCHOOL-GOING PERSONS PER DWELLING	NO. OF DWELLINGS	PERCENTAGE
1	62	35,5
2	38	21,7
3	46	26,3
4	20	11,4
5	6	3,4
6	3	1,7
TOTAL	175	100,0

4.2.5.4 Age

The table below shows the age groups and the number of persons found in each of the age groups. The last section of the

table shows the number of persons possessing drivers licences.

TABLE SHOWING AGE STRUCTURE

AGE GROUPS	NO. IN AGE GROUP	NO. POSSESSING DRIVERS LICENCE	% POSSESSING DRIVERS LICENCE
Under 6	105	—	—
6 - 18	393	7	1,8
19 - 30	104	71	68,3
31 - 40	123	86	69,9
41 - 50	87	62	71,3
51 - 60	53	25	47,2
Above 60	13	5	38,5

44,76%

The highest number is found in the 6 - 18 age group (393), followed by the 31 - 40 age group (123). The highest percentage possessing drivers licences is found in the 41 - 50 age group 71,3%, followed by the 31 - 40 age group with 69,9%. The number of people possessing drivers licences is lower than other residential areas (e.g. Greenhills 31 - 40 age group the percentage is 97,7%).

4.2.5.5 Vehicles

The table below shows the number and type of vehicles owned.

It will be noticed from the table that there are more people (98) owning 1 car than the number of people (57) owning 2 cars. This residential area's residents are in general not as highly paid as those of other residential areas and therefore cannot

be considered one of the more affluent residential areas.

TABLE SHOWING VEHICLES OWNED

NO. OF VEHICLES OWNED	NO. OF CARS	NO. OF BAKKIES	NO. OF HEAVY VEHICLES	NO. OF MOTOR-CYCLES
1	98	37	3	7
2	57	4	-	-
3	7	2	-	-
4	-	1	-	-

4.2.5.6 By whom general purchases are made

The highest percentage of purchases are made by the wife, 84,4%.

TABLE SHOWING BY WHOM PURCHASES ARE MADE

	NUMBER	PERCENTAGE
Husband	21	11,7
Wife	151	84,4
Children	7	3,9
TOTAL	179	100,0

4.2.5.7 Type of transport to shopping centres

The table below shows the type of transport and the number of persons using each type of transport to the shopping centres. The highest percentage is the car (79,3%), followed by the bus

as a means of transport (11,9%). There is a bus service through Randgate which follows only one route (see chapter on Transport).

The car percentage is comparatively high because Randgate is (with the exception of the small holdings) the furthest residential area from the C.B.D.

TABLE SHOWING TYPE OF TRANSPORT TO SHOPPING CENTRES

TYPE	NUMBER	PERCENTAGE
Car	154	79,3
Bus	23	11,9
Walking	17	8,8
Other	-	-
TOTAL	194	100,0

Because of the distance from the C.B.D., most residents of Randgate prefer to travel by car to the C.B.D.

4.2.5.8 Bus Service

The table below summarizes the answers to the questions on this section.

From the table it can be seen that the majority have a bus service near their home (82,2%). Only 44,4% make use of the

existing bus service and 77,8% feel that a bus service is not necessary.

TABLE SHOWING USEFULNESS OF BUS SERVICES

	YES	%	NO	%	TOTAL
Is there a bus service near your home?	125	82,2	27	17,8	152
If yes, do you make use of it?	68	44,4	80	55,6	144
If no, would such a service be desirable?	18	22,2	63	77,8	81

According to the questionnaires the bus service should be ope= rative on the following days:

DAY	MON.	TUES.	WED.	THURS.	FRI.	SAT.	SUN.
No. who requested	32	30	35	28	29	37	12

Wednesdays and Saturdays are the most favourable days. Most people requested that buses operate during peak times of each day: in the morning, lunch hours and late afternoon.

4.2.5.9 Where shopping is done

People who completed the questionnaires were asked to give a summary of where they did their shopping. Most of the shopping is done in Randfontein with high percentages of all sections found under the Randfontein column. No abnormally high percen=

tages are found in the other areas. The highest percentage for groceries in an area, except for the Randfontein area, is under their own residential area (25,9%).

TABLE SHOWING BUYING HABITS

	FURNI= TURE	HARD= WARE	GROCERIES	CLOTHING	SPECIAL GIFTS
Own residential area	10	23	42	20	18
Krugersdorp and West Rand towns	10	8	13	19	32
Randfontein	107	79	90	88	90
Johannesburg	21	10	17	32	30
Other	4	-	-	6	2

4.2.6 SMALLHOLDINGS

4.2.6.1 Type of dwelling

A total of 210 questionnaires from the different smallholding areas was received. Of this total, 10 are rented houses (4,8%) and 200 from home owners (95,2%). There are no blocks of flats in the smallholding areas.

4.2.6.2 Occupation

A total of 200 answered this section. Of this total, tradesmen numbered the most, 55 (27,5%), followed by mining, 34 (17,0%).

The other occupations are summarized in the following table:

TABLE SHOWING OCCUPATIONS

TYPE	NUMBER	PERCENTAGE
Govt., Prov., Mun.	24	12,0
Professional	10	5,0
Mining	34	17,0
Own Business	19	9,5
Tradesmen	55	27,5
Managers	15	7,5
Clerks, Typists	12	6,0
Salesmen/women	4	2,0
Other	11	5,5
None	16	8,0
TOTAL	200	100,0

The smallholdings seem to be a middle to lower income group's residential area. There is a low percentage of professional people (5,0%). Government, municipal, provincial employers, miners and tradesmen are the main occupations.

4.2.6.3 Number of persons per dwelling

i) Total number of persons per dwelling

This question was answered in all the questionnaires. Six persons per dwelling was the most common number (23,8%), followed by 5 persons per dwelling (19,5%). The table below summarizes this section.

TABLE SHOWING NUMBER OF PERSONS IN EACH DWELLING

NO. OF PERSONS FOUND IN EACH DWELLING	NO. OF DWELLINGS	PERCENTAGE	TOTAL NO. OF RESIDENTS
2	1	0,5	2
3	22	10,5	66
4	40	19,1	160
5	41	19,5	205
6	50	23,8	300
7	23	11,0	161
8	16	7,6	128
9	2	0,9	18
10	8	3,8	80
11	4	1,9	44
12	2	0,9	24
13	-	-	-
14	1	0,5	14
TOTAL	210	100,0	1 202

ii) Number of employed persons per dwelling

One employed person per dwelling is the most common number (56,2%), followed by 2 persons per dwelling (24,7%). The table below summarizes this section.

TABLE SHOWING NUMBER OF EMPLOYED PERSONS PER DWELLING

NO. EMPLOYED PER DWELLING	NO. OF DWELLINGS	PERCENTAGE
0	7	3,3
1	118	56,2
2	52	24,7
3	22	10,5
4	5	2,4
5	5	2,4
6	1	0,5
TOTAL	210	100,0

iii) Number of school-going persons per dwelling

Two school-going persons per dwelling is the most common number (28,1%), followed by one person per dwelling (26,7%).

TABLE SHOWING NUMBER OF SCHOOL-GOING PERSONS PER DWELLING

NO. OF SCHOOL-GOING PERSONS PER DWELLING	NO. OF DWELLINGS	PERCENTAGE
1	56	26,7
2	59	28,1
3	52	24,7
4	22	10,5
5	11	5,2
6	6	2,9
7	3	1,4
8	1	0,5
TOTAL	210	100,0

4.2.6.4 Age

The table below shows the age groups and the number of persons found in each of the age groups. The last section of the table shows the number of persons possessing drivers licences

435

The highest number is found in the 6 - 18 age group (562), followed by the 31- 40 age group (146). The highest percentage possessing drivers licences is found in the 31 - 40 age group (84,3%), followed by the 41 - 50 age group (82,5%). The number of persons possessing drivers licences is comparatively

high if compared to a residential area such as Randgate (71,3%) which is in the town area.

TABLE SHOWING AGE STRUCTURE

AGE GROUPS	NO. IN AGE GROUP	NO. POSSESSING DRIVERS LICENCE	% POSSESSING DRIVERS LICENCE
Under 6	113	—	—
6 - 18	562	18	3,2
19 - 30	123	74	60,2
31 - 40	146	123	84,3
41 - 50	137	113	82,5
51 - 60	81	56	69,1
Above 60	22	11	50,0

4.2.6.5 Vehicles

The table below shows the number and type of vehicles owned.

TABLE SHOWING VEHICLES OWNED

NO. OF VEHICLES OWNED	NO. OF CARS	NO. OF BAKKIES	NO. OF HEAVY VEHICLES	NO. OF MOTOR-CYCLES
1	100	101	10	11
2	51	20	5	2
3	13	2	1	-

It will be noticed from the table that there are more people (100) owning 1 car than the number of people (51) who own 2 cars. This residential area's residents are in general not as highly paid as those in other residential areas and therefore

it cannot be considered one of the "better" residential areas, financially. More bakkies (101) than cars (100) are owned, the reason being that a bakkie is a more useful vehicle than a car on a smallholding.

4.2.6.6 By whom general purchases are made

The highest percentage of purchases are made by the wife, 88,5%.

TABLE SHOWING BY WHOM PURCHASES ARE MADE

	NUMBER	PERCENTAGE
Husband	19	9,1
Wife	186	88,5
Children	5	2,4
TOTAL	210	100,0

4.2.6.7 Type of transport to shopping centre

The table below shows the type and the number using the type of transport to the shopping centres. The highest percentage is the car (91,5%), followed by the bus as a means of transport (5,7%). There is a bus service through the smallholding areas but only along the main roads.

The car percentage is very high because the smallholding areas are far out from the centre of town and to be able to do any

shopping, a vehicle must be used.

TABLE SHOWING TYPE OF TRANSPORT TO SHOPPING CENTRES

TYPE	NUMBER	PERCENTAGE
Car	192	91,5
Bus	12	5,7
Walking	3	1,4
Other	3	1,4
TOTAL	210	100,0

4.2.6.8 Bus Service

The table below summarizes the answers to the questions on this section.

TABLE SHOWING USEFULNESS OF BUS SERVICES

	YES	%	NO	%	TOTAL
Is there a bus service near your home?	137	65,2	73	34,8	210
If yes, do you make use of it?	54	34,2	104	65,8	158
If no, would such a service be desirable?	66	49,3	68	50,7	134

From the table it can be seen that the majority have a bus service near their smallholdings (65,2%). Only 34,2% make use of the existing bus service and 50,7% feel that a bus service is not necessary.

According to the questionnaires the bus service should be ope= rative on the following days:

DAY	MON.	TUES.	WED.	THURS.	FRI.	SAT.	SUN.
No. who requested	43	43	60	42	45	47	20

Wednesdays and Saturdays are the two most favourable days. Most people requested that buses operate during peak times of each day: in the morning, lunch hours and late afternoon.

4.2.6.9 Where shopping is done

People who completed the questionnaires were asked to give a summary of where they do their shopping. Most of the shopping is done in Randfontein with high percentages of all sections found under the Randfontein column. No abnormally high percen= tages are found in the other areas. The shopping trips to Johannesburg are mainly to buy furniture and special gifts of the kind not always to be found in Randfontein. Trips to near= by Krugersdorp are mainly to buy clothes and special gifts in a town with a greater number of shopping facilities.

TABLE SHOWING BUYING HABITS

	FURNI= TURE	HARD= WARE	GROCERIES	CLOTHING	SPECIAL GIFTS
Own residential area	12	16	15	17	15
Krugersdorp and West Rand towns	23	23	17	34	33
Randfontein	145	159	172	152	140
Johannesburg	24	8	6	14	27
Other	4	1	1	6	3

4.2.7 SUMMARY

Each residential area shows a difference in one or more of the aspects covered by the questionnaire. A summary of all the re= sidential areas in relation to each other together is necessary to bring out the different aspects more clearly.

4.2.7.1 Type of dwelling

RESIDENTIAL AREA	FLATS	RENTED	OWN HOUSE
Town	6,7	33,3	60,0
Homelake	2,4	23,9	73,7
Greenhills	4,0	9,9	86,1
Randgate	0,6	17,7	81,7
Smallholdings	-	4,8	95,2

From the table it can be seen that the town area has the highest

percentage of flatdwellers (6,7%), also the highest percentage of rented houses (33,3%) and that the smallholdings have the highest percentage of owned houses (95,2%).

4.2.7.2 Occupation

RESIDENTIAL AREA	FIRST OCCUPATION	%	SECOND OCCUPATION	%
Town	Mining	29,0	Tradesmen	20,0
Homelake	Tradesmen	23,8	Mining	18,1
Greenhills	Professional	23,4	Tradesmen	16,5
Randgate	Tradesmen	33,8	Mining	21,1
Smallholdings	Tradesmen	27,5	Mining	17,0

Tradesmen and miners form the bulk of Randfontein working population. The exception is to be found in Greenhills where the professional group is predominant. This is an indication that Greenhills is the residential area of the higher income group.

4.2.7.3 Number of persons per dwelling

i) Total number of persons per dwelling

RESIDENTIAL AREA	HIGHEST NO. PER DWELLING	%	SECOND HIGHEST NO. PER DWELLING	%
Town	5	27,2	4	21,8
Homelake	4	24,6	6	22,7
Greenhills	5	34,5	4	30,2
Randgate	5	29,1	6	21,7
Smallholdings	6	23,8	5	19,5

Notably the smallholdings residential areas has the highest number of people per dwelling (6) as opposed to Homelake and Randgate which have 5 and 4 persons per dwelling respectively and 6 persons per dwelling as their second highest number.

ii) Number of employed persons per dwelling

RESIDENTIAL AREA	HIGHEST NO. PER DWELLING	%	SECOND HIGHEST NO. PER DWELLING	%
Town	2	43,0	1	41,1
Homelake	1	43,7	2	35,3
Greenhills	1	54,3	2	38,9
Randgate	1	46,8	2	40,6
Smallholdings	1	56,2	2	24,7

All the residential areas except the town are the same. The town has two employed persons per dwelling as the highest number of employed persons per dwelling and the other areas have one employed person per dwelling.

iii) Number of school-going persons per dwelling

RESIDENTIAL AREA	HIGHEST NO. PER DWELLING	%	SECOND HIGHEST NO. PER DWELLING	%
Town	3	29,8	2	25,5
Homelake	2	33,5	1	30,5
Greenhills	2	41,3	1	29,8
Randgate	1	35,5	3	26,3
Smallholdings	2	28,1	1	26,7

The town area has the highest number of school-going persons per dwelling. In the "Second Highest" column Randgate features the highest number of school-going persons per dwelling (3).

4.2.7.4 Age

RESIDENTIAL AREA	AGE GROUP OF HIGHEST NUMBER	%	AGE GROUP POSSESSING MOST LICENCES	%
Town	6 - 18	49,3	31 - 40	71,7
Homelake	6 - 18	45,2	51 - 60	89,2
Greenhills	6 - 18	45,8	31 - 40	97,7
Randgate	6 - 18	44,8	41 - 50	71,3
Smallholdings	6 - 18	47,5	31 - 40	84,3

All the residential areas have the same age group in which the highest number is found (6 - 18). The town has the highest percentage (49,3%).

With regard to the possession of drivers licenses, Homelake's highest percentage is in the 51 - 60 age group. The highest percentage in all the other areas falls within a lower age group. This may be an indication that there is a greater num= ber of elderly people in Homelake than in the other residen= tial areas.

4.2.7.5 Vehicles

RESIDENTIAL AREA	NO. OF CARS MOSTLY OWNED	%
Town	1	43,3
Homelake	1	43,2
Greenhills	2	30,0
Randgate	1	42,1
Smallholdings	1	41,5

Most of the residents in all the residential areas with the exception of Greenhills, possess 1 car. In Greenhills the average number is 2 cars. This is another indication that Greenhill's residents belong to the higher income group.

4.2.7.6 By whom general purchases are made

RESIDENTIAL AREA	BY WHOM	%
Town	Wife	83,4
Homelake	Wife	82,1
Greenhills	Wife	82,8
Randgate	Wife	84,4
Smallholdings	Wife	88,5

The wife in each family does most of the purchases in each residential area. The smallholdings's percentage is the highest (88,5%), followed by Randgate (84,4%).

4.2.7.7 Type of transport to shopping centres

The most common form of transport to the shopping areas is the

car. The highest percentage is for the smallholdings (91,5%). The reason for this is that this area is far from the C.B.D. or other shopping centres.

RESIDENTIAL AREA	MODE OF TRANSPORT	%
Town	Car	52,2
Homelake	Car	73,5
Greenhills	Car	89,0
Randgate	Car	79,3
Smallholdings	Car	91,5

4.2.7.8 Bus Service

RESIDENTIAL AREA	% WITH BUS SERVICE	% MAKING USE OF IT	% WHO WANT A SERVICE
Town	23,5	16,1	28,0
Homelake	15,1	18,0	38,3
Greenhills	17,2	21,5	47,4
Randgate	82,2	44,4	22,2
Smallholdings	65,2	34,2	49,3

The residential area with the best bus service is Randgate (82,2%), followed by the smallholdings (65,2%). The other areas have a very low percentage. Randgate and the smallholdings make the most use of the bus service, 44,4% and 34,2%. The smallholdings and Greenhills are the most interested in having a bus service, 49,3% and 47,4%.

With the exception of the town area where residents would like buses to run on Tuesdays, Fridays and Saturdays all other residential areas would like buses to operate on Wednesdays and Saturdays.

4.2.7.9 Where shopping is done

All the residential areas do their main shopping in the Randfontein shopping area (C.B.D.). There are small variations in shopping habits for certain articles:

Town:	Clothing bought in Johannesburg	16,9%
	Special gifts bought in Johannesburg	21,4%
Homelake:	Clothing bought in Johannesburg	16,2%
	Special gifts bought in Johannesburg	26,5%
Greenhills:	Clothing bought in Johannesburg	28,7%
	Special gifts bought in Johannesburg	30,0%
Randgate:	Groceries bought in own residential area	25,9%
Smallholdings:	Special gifts bought in Krugersdorp and West Rand towns	15,1%

CHAPTER 5

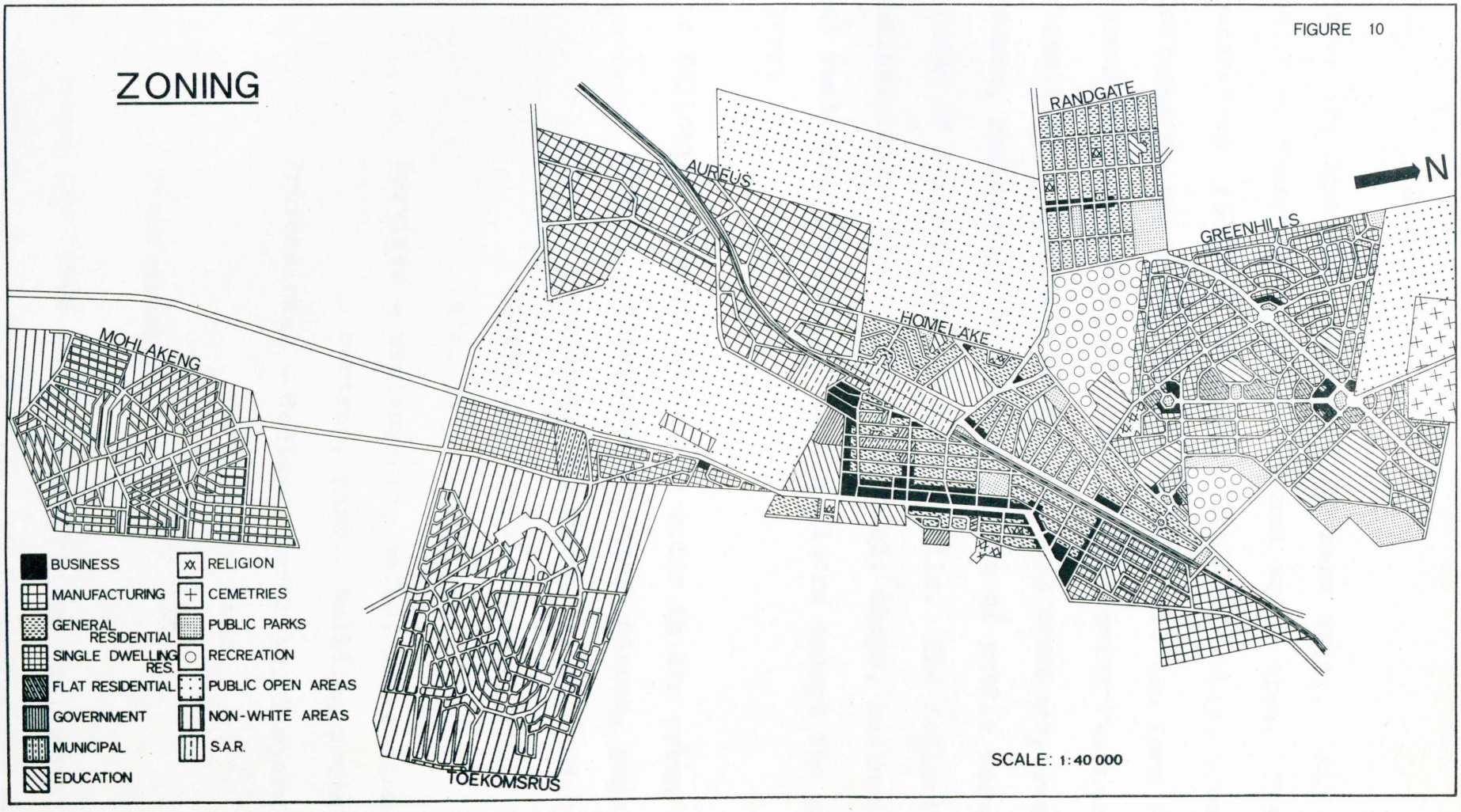
ZONING

Zoning is a comparatively new idea in urban studies, be it town planning or urban geography. Until a few decades ago cities or towns did not make use of zoning areas for special or certain functional uses. The zoning map was in actual fact land-use maps up to the time of the compilation of the new zoning map. To-day zoning is used in all urban areas to make expansion of the urban settlement more disciplined.

The purpose of zoning is to ensure that one form of use is not intruded upon by other or unpleasant uses. The aim is thus to create an orderly urban pattern. The type of building and maximum floor area, building intensity and building height are all prescribed. Zoning is done for economic reasons such as having the industrial area on the outskirts of a town where the land is the cheapest in order to attract manufacturers. A further reason is for convenience eg., placing residential areas near transport routes or near employment opportunities.

Figure 10 on page 91 is the map showing the zoning of Randfontein. The different zones appearing on the map are the following:

FIGURE 10


ZONING
RANDGATE
AUREUS
GREENHILLS
HOMELAKE
MOHLAKENG
TOEKOMSRUS
N
BUSINESS
MANUFACTURING
GENERAL RESIDENTIAL
SINGLE DWELLING RES.
FLAT RESIDENTIAL
GOVERNMENT
MUNICIPAL
EDUCATION
RELIGION
CEMETRIES
PUBLIC PARKS
RECREATION
PUBLIC OPEN AREAS
NON-WHITE AREAS
S.A.R.
SCALE: 1:40 000

5.1 Business

There are general and special business areas. Only general business areas occur in the central urban area. The special businesses are found on the smallholdings which area is not included in the zoning map. According to the Town Planning Scheme of Randfontein of 1953, the following businesses are classified as general: Shops, business premises, dwelling houses, residential buildings, places of public worship, places of instruction and social halls. The following businesses are classified as special: shops, business premises and residential buildings on all floors except the ground floor.

The following general businesses occur in the urban area:

Retail - supermarkets, chain stores, general dealers, department stores and speciality shops (gifts, clothing, jewellers, chemists, etc.).

Services - restaurants, cafes, entertainment centres, parks, building societies etc.

Professional - doctors, dentists, lawyers, accountants etc.

5.2 Manufacturing

These zones are found on the outskirts of the town, where large storage spaces are required by factories for their raw materials and manufactured products. Stands are large making

this zone very extensive.

5.3 General Residential

This zone may contain single dwellings, flats, hotels and boarding houses. This zone is found in the older part of Randfontein.

5.4 Single Dwelling Residential (White)

This area is only for single dwellings. It is purely a residential area. This type of residential area covers the largest area on the map.

5.5 Flat Residential

In the single dwelling residential areas, certain blocks have been zones for flats only. This is only found in Greenhills.

5.6 Government

The areas on the map belong to the Post Office, Magistrates Offices, Inland Revenue and Police Station.

5.7 Municipal

Large areas on the map are zoned for municipal use eg., municipal offices (and land for further extensions), library, traffic department etc.

5.8 Education

Existing educational institutions have large areas of land and more has been set aside for more schools to be built (especially in Greenhills).

5.9 Religion

Existing church stands with the buildings have been marked on the map because no spesific areas have been zoned for this function.

5.10 Cemetries

All areas for cemetries except for the cemetries found in the outlying areas of the smallholdings have been included in the map.

5.11 Public Parks

Many park areas occur in Randfontein, some are developed and the others are definite areas left open to be developed as the building intensity increases. The map shows all park areas, developed and undeveloped.

5.12 Recreation

This includes all sports grounds, recreation areas (such as Riebeeck Lake) camping and the public swimming bath.

5.13 Public Open Areas

These are the areas which have been left open and are as yet undetermined.

5.14 Non-White Area

These areas are located in the south east corner of the urban area. All the above facilities are allowed in this area. The two areas are the Bantu Township (Mohlakeng) and the Coloured Township (Toekomsrus).

5.15 South African Railways

This is the strip of land along which the railway is found. It also includes the station area with shunting yards.

CHAPTER 6

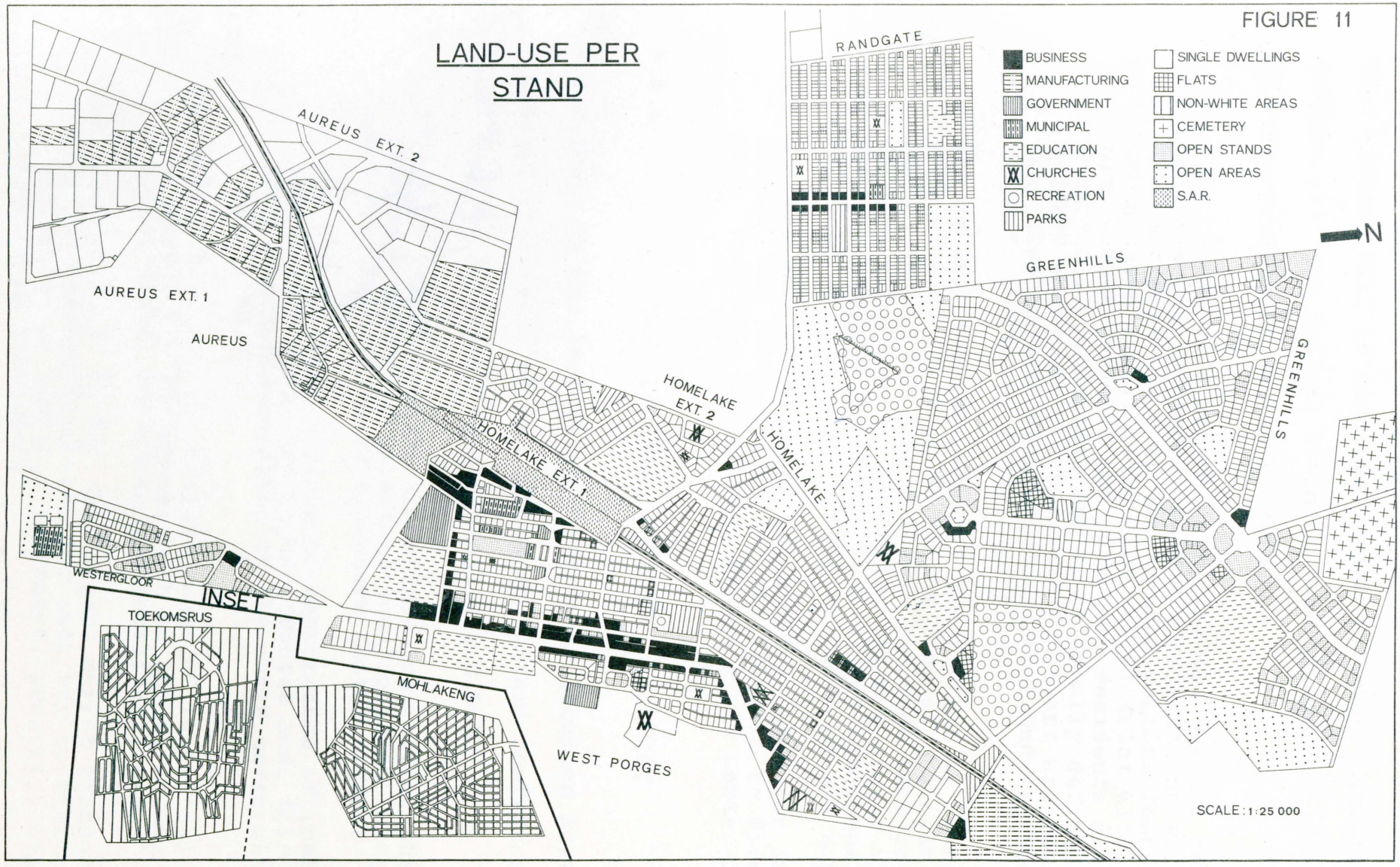
URBAN LAND-USE IN RANDFONTEIN

"A knowledge of the arrangement of land uses in the city and of the relative proportions of land devoted to the several uses is basic to geographic research and to planning. The traditional way of gaining this knowledge is through the preparation of a general land-use map." (Murphy, 1966, page 186).

Each town or city will have a different land-use pattern depending on the size and number of each urban function. Randfontein is a comparatively small urban area if compared to a city such as Johannesburg. It is therefore easier to draw up a land-use map of Randfontein because of the simplicity of the urban functions which are not so well developed as a larger urban area. Land-use patterns in Randfontein tend to develop in specific concentrations.

Figure 11 shows the land-use of Randfontein. The classification of the different land-uses found on the map will be dealt with separately, however continuous reference to the map will be necessary.

FIGURE 11


LAND-USE PER STAND
RANDGATE
BUSINESS
MANUFACTURING
GOVERNMENT
MUNICIPAL
EDUCATION
CHURCHES
RECREATION
PARKS
SINGLE DWELLINGS
FLATS
NON-WHITE AREAS
CEMETERY
OPEN STANDS
OPEN AREAS
S.A.R.
N
AUREUS EXT. 2
AUREUS EXT. 1
AUREUS
HOMELAKE EXT. 2
HOMELAKE EXT. 1
HOMELAKE
GREENHILLS
GREENHILLS
WESTERGLOOR
INSET
TOEKOMSRUS
MOHLAKENG
WEST PORGES
SCALE : 1:25 000

6.1 BUSINESSES

This section will be discussed under two main business area catagories: the central business area (including the C.B.D.) and the residential business areas.

i) "The centre of a modern city exhibits special features of land use and possesses distinctive functions which make this the best known of the various regions found within urban areas ..... it is also the district with which both casual visitors and permanent residents are familiar ..... Central Areas, as usually defined, include streets where central business functions are found, but they also contain residual industrial and residential zones." (Johnson, 1972, page 111).

The central business area of Randfontein is found on the east side of the town on either side of the Main Reef Road. The information gathered has been done separately for two sub-areas in the central town business area; the Central Business District (C.B.D.) and the areas which do not fall in the C.B.D. (Refer to the land-use map fig 11).

ii) The residential business areas which cater for daily needs. The residential business areas to be discussed are: Homelake, Greenhills, Randgate and Westergloor.

6.1.1 THE CENTRAL BUSINESS DISTRICT

Peter Penny in his lecture entitled "Some Location Aspects of Property" (delivered at the 'Focus on Cities' Conference in 1968) had the following to say about the C.B.D.:

"For most administrative and office activities, the C.B.D. possesses a number of important locational advantages which are not duplicated elsewhere in the region:

i) The C.B.D. forms a place of convergence of public transport systems and highway routes and, this is the most accessible location to the whole metropolitan labour pool.

ii) The C.B.D. has the fullest range of facilities serving employees and businesses such as shops, eating places, banks, clubs, entertainment facilities, etc.

iii) The C.B.D. is by far the largest market concentration in the metropolitan area for such key business activities as banking, insurance, property, legal and accounting services".

The C.B.D. is the heart of the business area of a town. The C.B.D. is continuously expanding so that the immediate street blocks' land values will increase as the C.B.D. moves into surrounding residential areas. The highest land values are found in the C.B.D. because businesses try to find the most central situation in the business area. The C.B.D. is one of the most important characteristics of urban settlement. It is therefore necessary to delimit the C.B.D. in Randfontein's central town business area before it can be discussed.

6.1.1.1 DELIMITING THE C.B.D.

There are many methods which have been applied to cities all over the world by urban geographers and planners.

Randfontein's business area is situated in one street, Main Reef Road. The traffic in the business area is very heavy because this road is the main road between Westonaria-Vereeniging-Fochville-Potchefstroom and West Rand-Johannesburg-Pretoria.

An abnormality of the business area of Randfontein is that the blocks which are on either side of the Main Reef Road have business stands facing this road. Behind the business stands are residential stands occupied by homes.

The method used to delimit the C.B.D. of Randfontein is the core-frame concept of Horwood and Boyce.

> "Surrounding the core is the central business district frame. It is characterized by 'nodes' of off-street parking, automobile sales and services, special services (e.g. medical), wholesaling with stocks, warehousing, intercity transportation terminals and facilities, light manufacturing, and multifamily residences. Lines of 'good flow' connect the nodes with each other, with the core, and with areas beyond the frame. Natural barriers, heavy industry and residential neighborhoods form most of the outer boundary of the frame." (Murphy,1966,page 312).

The main objection to this concept is the difficulty experienced in locating the boundary of the core and the boundary of the frame. However, Randfontein's business area lends itself admirably to this method because it is easy to locate the boundary through the blocks. Each block has businesses facing the Main Reef Road and the other halves of the blocks, behind the business stands, are residential areas. There is thus a definite line separating business functions from the residential, wholesale, parking and other functions.

The above summary by Murphy of the core-frame concept, when

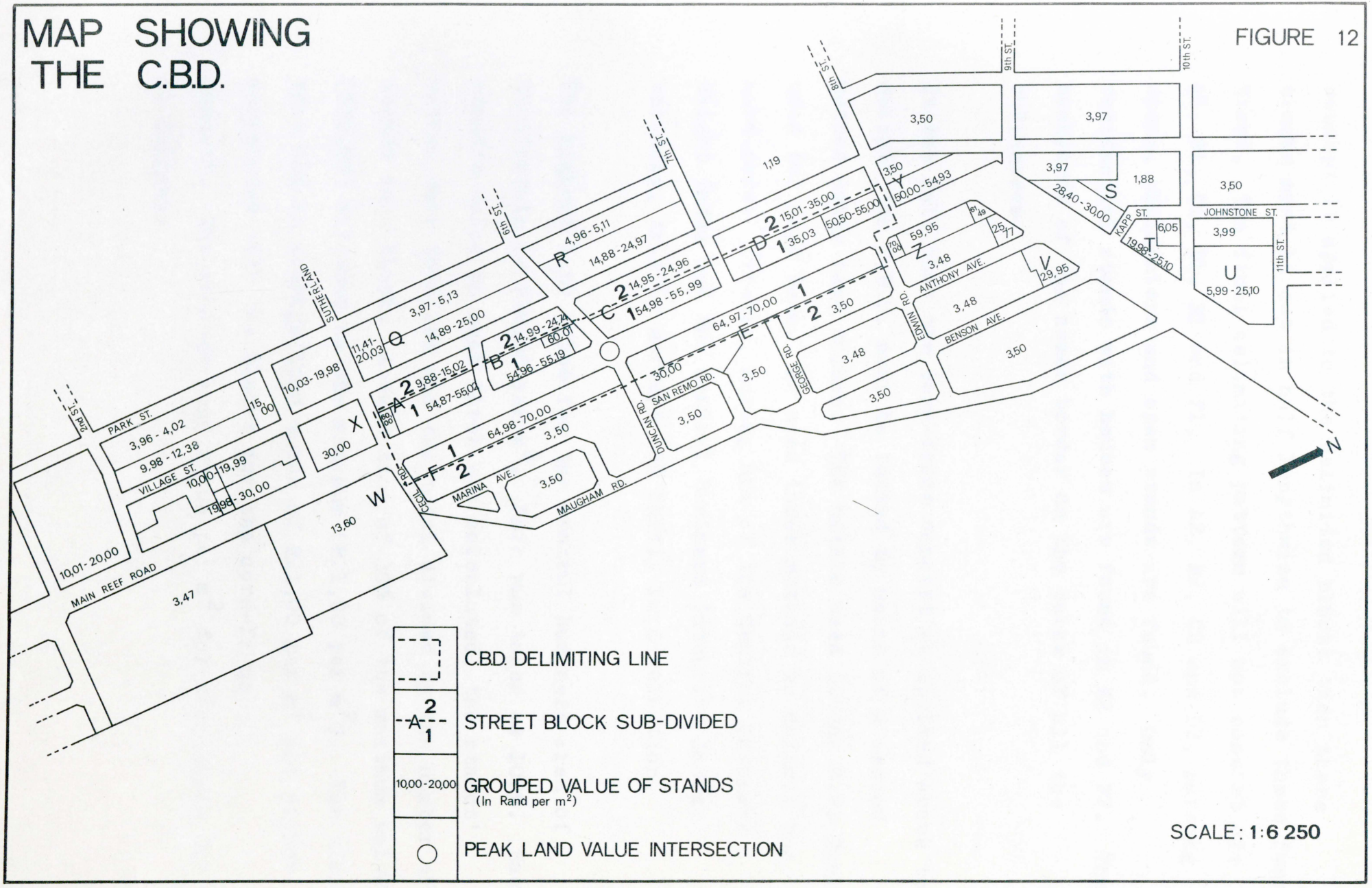
applied to the town's central business area resulted in the following whole street-blocks being included as the C.B.D. (refer to figure 12) - A1, A2, B1, B2, C1, C2, D1, D2, E1, E2, F1 and F2. The reason why blocks W,X,Y,Z were not included was: block W contains a school and forms a natural boundary, block X contains very old shops in which tennants do not stay long. There are no competing shops near to this block because of the school opposite to it. Most of the shops are always empty and if occupied, the business lasts for a very short time. The school seems to have a detrimental effect on the establishment of businesses in block X. Blocks Y and Z are blocks which contain garages, motor car second-hand dealers, light industry (tyre retreaders) and open stands.

The blocks to the west of the delimited area are not included because the main function is residential. On the few stands that do not have houses one finds parking areas, flats and wholesalers. The blocks to the east of the delimited area are completely residential with no other type of building except houses.

The core-frame concept can be taken a step further to delimit the C.B.D. even more effectively. As explained earlier, most of the blocks that have been delimited contain large residential areas and other functions which, according to Horwood and Boyce are not included in the C.B.D. If the

MAP SHOWING THE C.B.D.

FIGURE 12



concept is applied to the delimited blocks then these blocks must be cut in half lengthwise to exclude these functions. The final delimiting pattern will now consist of: A1, B1, C1, D1, E1 and F1. In A2, B2, C2 and D2, parking areas, wholesalers and open stands are found. Only residential stands with houses are found in E2 and F2. The backyards of the homes border on the backs of all the businesses.

It was felt that the core-frame concept as applied above to delimit the C.B.D. must be tested by means of a second method using land values. The method used is one D.H. Davies used for Cape Town. He used three methods to delimit the hard-core: firstly, making use of the Central Business Height Index and the Central Business Intensity Index; secondly, traffic surveys and lastly land valuation.

The highest land value for the central business area of Randfontein is R70,00 per m^2. This was taken as 100%. Each stand's value in each block was calculated, the stands' values were totalled and the total divided by the number of stands in a block. A valuation of 30% of the maximum value (R70,00) was used as the minimum (R21,00 per m^2). The blocks that had an average land value of R21,00 per m^2 and higher correlated with the blocks for the core-frame concept. The average land value per m^2 for each block was as follows:

BLOCK	AVERAGE VALUE/m^2
A1 and A2	R32,86
B1 and B2	R39,13
C1 and C2	R35,92
D1 and D2	R37,55
E1 and E2	R39,09
F1 and F2	R36,19
W	R13,60
X	R30,01
Y	R44,38
Z	R38,16

All the surrounding blocks were less than R21,00/m^2. When blocks W, X, Y and Z are disregarded because of the core-frame concept, the same delimited areas as those resulting from application of this method, appear.

A further step can be taken to test the accuracy of the delimited area, and that is to calculate where the peak land value intersection is located. If the business stands in each of the blocks are used to calculate the average land values per block for the delimited area, the averages per block are the following:

BLOCK	VALUE/m^2
A1	R55,81
B1	R56,02
C1	R56,61
D1	R47,10
E1	R63,39
F1	R61,37

According to the above information, the peak land value intersection is the road intersection of Main Reef Road with Sixth Street and Duncan Road. The PLVI is found in the

approximate centre of the delimited area (see figure 12). The visual appearance of the delimited area also fits the abovementioned methods used for delimitation.

The final delimiting of blocks for the C.B.D. are the following: A1, B1, C1, D1, E1 and F1. The delimited zone is shown on figure 12 .

6.1.1.2 LAND VALUES IN THE C.B.D.

The land values in the C.B.D. were discussed in the previous section where they were used as a method to delimit the C.B.D. Figure 12 shows the land value per stand in the C.B.D. The highest value is R70,00/m^2 and the lowest is R35,00/m^2.

TABLE 10

TABLE SHOWING LAND VALUE FREQUENCY IN THE C.B.D.

VALUE (IN RAND PER m^2)	NUMBER OF STANDS	FREQUENCY %
Under 30,00	0	0
30,01-40,00	2	3,39
40,01-50,00	0	0
50,01-60,00	17	28,81
60,01-70,00	40	67,80
TOTAL	59	100,00

The highest percentage (67,8%) of stands have a value of R60,01 - R70,00. These stands are found ~~in~~ around the PLVI. There

are 37 of the highest value stands on the east side of Main Reef Road. The other 3 are on the west side and are corner stands. No stand is valued at less than R61,97/m^2 on the east side. The other stands in the R50,01-R60,00 and R30,01 - R40,00 are all found on the west side of Main Reef Road.

6.1.1.3 EXPANSION OF THE C.B.D.

Ullman suggests that the C.B.D. may lose its uniqueness and become just one of a number of centres in urban settlement. Hoyt sees the overall decline in the predominance of central retail areas. There is a general agreement that the C.B.D. is changing to a great extent and will change still more. (Murphy, 1966, page 315).

Randfontein C.B.D. will expand outwards but not lose its central retail areas because the residential areas are all too small to support large shopping centres. The present shopping area will be able to expand outwards but still stay adjacent to the present C.B.D.

The probable future expansion of the C.B.D. is shown on figure 12 . The zoning map of Randfontein was used to establish where the business stands are found, which were in the C.B.D.'s proximity. Blocks A2 to D2 border on the existing C.B.D. There are open stands and wholesalers in these blocks which

can become retail areas. No expansion can take place in Blocks E2 and F2 in the near future because of dominant residential functions and also because the town's natural border is very near to this side. There are non-C.B.D. businesses established in blocks Y, Z, S, T, U and V. These blocks will be the best area for expansion because of the business function found here. Together with this it is on the Main Reef Road which is a major through-road carrying heavy traffic. Another reason is the building of a new road bridge across the railway line to the west of this area (3 blocks away). There is one bridge leading to town from the west side which enters the town's business area on 6th Street. The second bridge will cross the railway line opposite 10th Street. This will make the north side of town more easily accessible to shoppers. Businesses establishing themselves near 10th Street will benefit from the residential areas which find the new bridge a shorter route to town (Homelake and Greenhills). According to the zoning map, the east side of blocks Q and R are set aside for business premises. There are no magnetic influences to draw other businesses to these blocks. The blocks A2 and B2 will have to be developed first before businesses can move across the street (Village Street).

There are certain factors which will hinder the expansion of the C.B.D. The eastern boundary of the urban area is very near to the C.B.D. (one block away). This land belongs to the mines. The Police Station is situated in this area. The southern end of the business area is bordered by a secondary school. The only obstacle on the west side is the large

park directly behind block D. There is no immediate obstacle on the northern side. Here the expansion will be linear. The only limit will be that the business area will stretch too far north making the shopping distances too large.

6.1.1.4 TYPE OF BUSINESS AND LABOUR ANALYSIS OF THE C.B.D.

A total of 969 people work in 98 businesses in the C.B.D. daily. The information was obtained by going personally to each business. This information was collected during March 1975.

TABLE 11

TABLE SHOWING AN ANALYSIS OF THE COMMERCIAL ACTIVITIES AND LABOUR DISTRIBUTION IN THE C.B.D.

TYPE	NO.OF TYPE	WHITE		NON-WHITE		TOTAL	VEHICLES OWNED BY BUSINESS
		MALE	FEMALE	MALE	FEMALE		
Furniture	13	26	32	80	17	155	35
Supermarket	2	5	48	44	30	127	1
Banks	4	32	76	11	4	123	8
Clothing-General	6	5	37	10	8	60	4
Garage	2	20	5	25	6	56	7
Hardware	2	7	10	20	0	37	5
Cafe	6	7	7	13	9	36	1
Hotel	2	3	3	15	15	36	0
Estate Agents	4	14	17	3	1	35	6
Chemist	5	6	17	10	2	35	8
Insurance	3	17	8	1	2	28	2
Clothing-Women	5	0	20	3	4	27	1
Building Society	4	2	14	3	1	20	0
Shoe Store	4	0	11	2	7	20	0
Bottle Store	4	5	6	9	0	20	4

Table continued on following page/

TABLE (Continued)

TYPE	NO.OF TYPE	WHITE		NON-WHITE		TOTAL	VEHICLES OWNED BY BUSINESS
		MALE	FEMALE	MALE	FEMALE		
Stationery	1	0	4	12	2	18	0
Clothing-Men	3	8	5	5	0	18	1
Ladies-Hair-dresser	3	0	13	0	3	16	0
Mens-Hairdresser	3	7	2	3	1	13	0
Restaurant	1	2	1	4	6	13	0
Jeweller	4	3	5	4	0	12	0
Optician	1	1	4	2	2	9	0
Music	2	1	3	2	1	7	0
Florist	2	1	3	2	0	6	0
Butcher	1	2	1	3	0	6	1
Cycle Store	1	1	2	2	1	6	0
Gift Shop	2	0	3	0	2	5	0
Radio Repairs	1	3	0	1	0	4	1
Textile,Curtains	2	0	3	0	1	4	0
Sport Shop	1	2	1	1	0	4	0
Photography	1	1	1	1	1	4	1
Clothing-children	1	0	2	0	1	3	0
Pet Shop	1	1	0	1	1	3	0
Office Supplies	1	1	1	1	0	3	1
TOTAL	98	183	365	293	128	969	87
PERCENTAGE	-	18,9	37,7	30,2	13,2	100	-
AVERAGE	-	1,9	3,7	2,9	1,3	9,9	0,9

The furniture businesses present the largest number of any one type of business followed by cafès and general clothing stores with chemists ranking third (13, 6, 5)

More White females are employed in the C.B.D. than White males. The banks employ the greatest number of women and the super= markets the second greatest number (76, 48). The other busines= ses that employ a high percentage of white female staff are

furniture (sales ladies); clothing (sales ladies); Estate agents, Building Societies (office work). The White males usually have senior positions in the businesses and the greatest number of White males are found in furniture shops, banks and garages.

There are more Non-White males employed in the C.B.D. than females. The males are mostly in the furniture businesses and supermarkets as packers and delivery boys. Bantu females are mostly employed by the supermarkets as stock-packers and cleaners; and by the hotels as cleaners. Furniture shops, supermarkets and banks employ the greatest number of people-41,8% of the C.B.D. total.

6.1.1.5 PEDESTRIAN TRAFFIC IN THE C.B.D.

Refer to the section on traffic page 184.

6.1.1.6 VEHICLE TRAFFIC IN THE C.B.D.

Refer to section on traffic page 143.

6.1.1.7 VEHICLE PARKING IN THE C.B.D.

Refer to the section on traffic page 171.

6.1.2 OTHER BUSINESSES IN THE CENTRAL TOWN BUSINESS AREA

The businesses that are found on the outskirts of the C.B.D.

include 8 garages, 2 secondhand-car dealers, 2 auctioneers, 1 dry cleaner, 1 hotel, 2 greengrocers and 2 cafes. All these businesses are situated in blocks which border on the C.B.D. and will become developed when the C.B.D. expands.

6.1.3 COMMERCIAL AREAS IN THE RESIDENTIAL AREAS

Homelake

Homelake's business areas are situated along Freda Avenue and on Riebeeck Road. (See map on land-use figure 11 pg 97). The commercial activities of Homelake can be summarized in the table below.

TABLE 12

TABLE SHOWING DETAILED ANALYSIS OF THE COMMERCIAL ACTIVITIES OF HOMELAKE

TYPE	NO.OF TYPE	FRONTAGE METRES	AREA SQ.METRES	NO. OF VEHICLES	WORKERS		
					WHITE	NON-WHITE	TOTAL
Appliance Repairs	1	6,9	29,0	1	1	1	2
Bottle Store	1	7,8	32,6	2	3	2	5
Butcher	3	16,0	32,8	5	9	7	16
Cafe	3	25,0	236,2	4	7	6	13
Clothing	1	8,0	30,4	1	2	1	3
Garage	1	-	-	2	3	2	5
Green-grocer	3	19,0	108,9	2	4	3	7
TOTAL	13	82,7	469,9	17	29	22	51

From the table it will be noticed that butchers, cafes and greengrocers make up 69,2% of the businesses found in this area (9 out of 13). The cafes have the highest average frontage size (8,3m). Butchers have the smallest average frontage size (5,3m). The cafes' areas are the largest, averaging 78,7 sq.metres per cafe. The reason for the high average is that one of the cafes sells groceries making it a small supermarket with a large area. The appliance repair shop has the smallest area (290 sq. metres). The bottle store has the highest number of vehicles owned. The 3 butchers have a total of 5 vehicles. The vehicles in both cases are used for delivery purposes. The businesses in Homelake are small and therefore do not employ many people. The total of 13 businesses employ 51 people - an average of 4 per business. The butchers have the largest number of employees (16) giving an average of 5,3 per business. It is interesting to note that out of a total of 51 workers there are more White employees (29) than Non-White (22) or 56,9% to 43,1%. Most of the Non-Whites do the deliveries.

Greenhills

There are 3 business areas, 2 in Convent Road and the other in Kenneth Avenue.
(See the land-use map figure 11 pg.97).

TABLE 13

TABLE SHOWING DETAILED ANALYSIS OF THE COMMERCIAL ACTIVITIES OF GREENHILLS

TYPE	NO.OF TYPE	FRONTAGE METRES	AREA SQ.METRES	NO.OF VEHICLES	WORKERS		TOTAL
					WHITE	NONWHITE	
Bottle Store	1	14,0	134,4	2	3	3	6
Butcher	1	6,0	37,8	2	3	2	5
Cafe	1	13,0	130,0	1	2	2	4
Chemist	1	15,5	103,9	3	4	2	6
Estate Agent	2	20,7	59,9	3	5	2	7
Florist	1	7,0	42,0	1	1	1	2
Garage	2	-	-	7	9	5	14
Green-Grocer	2	11,7	55,7	1	3	1	4
Grocer	2	38,3	513,6	2	5	4	9
Ladies' Hairdresser	2	17,8	165,7	-	7	2	9
TOTAL	15	144,0	1243,0	22	42	24	66

Greenhills has a total of 15 businesses, being very evenly spread in that there is no type of business numbering more than 2. The grocers have the lowest frontage, an average of 19,2 metres, followed by the one chemist with 15,5 metres. The butcher has the smallest frontage, 6,0 metres. The 2 grocers have the largest area, an average of 256,8 sq.metres, followed by the bottle store with an area of 134,4 sq.metres. The above businesses need large floor areas because their goods have to be displayed on shelves. All businesses except the ladies hairdressers own vehicles. The vehicles are used for delivery purposes. The Estate Agents supply their agents with motor cars. The greatest number of vehicles owned per business is

found in garages (3,3), followed by the chemist (3). From the table it will be noticed that out of a total of 66 employees 42 are White and 24 are Non-White i.e. 63,6% and 36,4%. The 2 garages have the largest number of employees averaging 7 each, followed by the bottle store and chemist with 6 each. Most of the Non-Whites are employed for delivery purposes. The chemist employs the largest number of Whites.

Randgate

All Randgate's businesses are on the west and east of Union Street which is the centre of Randgate. (See the map on land-use figure 11 page 97).

For table showing detailed analysis of the commercial activities of Randgate - refer to following page.

Randgate has a total of 23 businesses making it the largest of the residential business areas. The businesses which appear to be dominant are butchers , cafes and grocers, (3 in each case). The chemist has the largest frontage (20,8 m), followed by the agricultural supplies (15,3 m). The two men's hairdressers have the smallest frontage (5,6m). The three grocers have the largest average area, 177,0 sq.metres. The reason for this is that one grocer can be classified as a small supermarket. Very close to the grocers is the chemist with 170 sq.metres and then the 2 greengrocers with an average of 121 sq.metres. The

TABLE 14

TABLE SHOWING DETAILED ANALYSIS OF THE COMMERCIAL ACTIVITIES OF RANDGATE

TYPE	NO.OF TYPE	FRONTAGE METRES	AREA SQ.METRES	NO.OF VEHICLES	WORKERS		
					WHITE	NON-WHITE	TOTAL
Agricultural supplies	1	15,3	22,9	2	3	3	6
Bottle Store	1	10,7	86,7	2	2	2	4
Butcher	3	23,2	66,1	5	9	7	16
Cafe	3	20,7	117,3	4	7	5	12
Chemist	1	20,8	170,6	3	6	2	8
Clothing	2	11,2	41,5	2	3	2	5
Cycle shop	1	6,0	13,2	1	1	1	2
Dairy depot	1	7,5	15,8	-	1	1	2
Garage	2	-	-	5	6	10	16
Greengrocer	2	24,5	242,0	2	5	2	7
Grocer	3	41,1	531,8	5	7	10	17
Ladies' Hairdresser	1	7,0	35,0	-	1	1	2
Mens' Hairdresser	2	11,1	36,2	-	4	2	6
TOTAL	23	199,1	1379,1	31	55	48	103

smallest floor area belongs to the cycle shop (13,2 sq.metres) and the dairy (15,8 sq.metres). The chemist owns the most vehicles (3) followed by the garages with 2,5 vehicles each. As in the previous two residential areas most of the vehicles are used for delivery purposes. There are 103 people employed in Randgate businesses, 55 are White (53,4%) and 48 Non-Whites (46,6%). The chemist employs the most Whites (6). The garages employ the most Non-Whites (5 each). The chemist and two garages have the largest number of employees (8 employees each). The cycle shop, dairy and ladies hairdresser have the lowest employment figure, 2 each.

Westergloor

This is a very small business area with a total of 4 businesses 2 of which are garages. This area is found on the east side of Main Reef Road leading out of Randfontein to Westonaria. (See map on land-use figure 11 pg 97).

TABLE 15

TABLE SHOWING DETAILED ANALYSIS OF THE COMMERCIAL ACTIVITIES OF WESTERGLOOR

TYPE	NO.OF TYPE	FRONTAGE METRES	AREA SQ.METRES	NO.OF CARS	WORKERS		
					WHITE	NONWHITE	TOTAL
Fish and Chips	1	5,6	30,8	1	1	1	2
Garage	2	-	-	2	4	15	19
General Dealer	1	11,3	72,0	1	1	1	2
TOTAL	4	16,9	102,8	4	6	17	23

Mostly Non-White people make use of this business area because it is directly opposite the old location and is also on the road leading to the Bantu Township Mohlakeng and the Coloured Township of Toekomsrus. It is too small to analyse in detail exxept that it will be noticed that there are 17 Non-Whites employed (73,9%) compared to 6 Whites (26,1%) in a total of 23 employed. The two garages make up the highest percentage of workers in this area, 82,6% of the total.

"Manufacturing, like other land uses within cities, tends to be found in distinctive areas, but often exhibits a more complex arrangement than many other urban activities. This is because manufacturing includes a number of different types of production, the location of each being controlled by different combinations of factors". (Johnson, 1972 page 155).

The factors which attracted or will attract industries to Randfontein are the following:

i) The accessibility to markets. The markets must be comparatively nearby to cut transport costs. Randfontein lies in the Witwatersrand area, with many rail and road links to major market areas of Johannesburg and the Southern Transvaal complex.

ii) Manufacturing concerns tend to be established in areas where related industries are found. The main group of related factories in Randfontein is textile and food industries (5 textile and 3 food factories). A related concern to the above is transport, two large transport concerns are found in the industrial area.

iii) The availability of a labour force, skilled and unskilled. There is a large Bantu township (Mohlakeng) very near to the industrial area and the resettling of the Coloureds in Randfontein (See Chapter 4) will provide a new and large labour force.

iv) The raw materials required is an important factor determining the establishment of an industry. No factory in Randfontein makes use of raw materials found in the immediate vicinity of the town. All raw materials must be transported by rail or road to the factories.

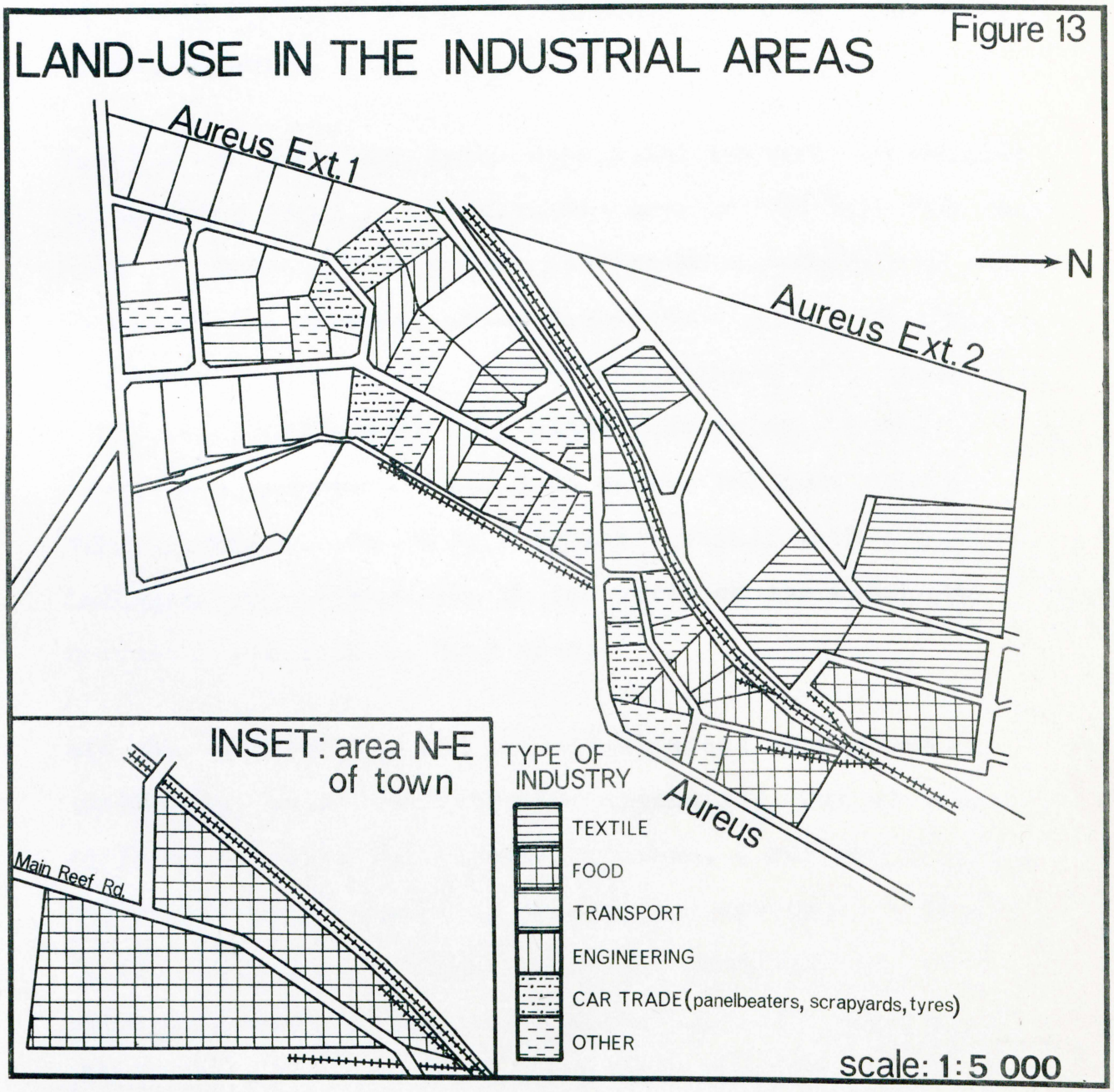
v) The other factors are: relatively cheap land, large stands, water and electricity supplies, railway siding facilities and a flat relief.

Randfontein's industrial areas satisfied the above requirements.

There are no heavy industries in Randfontein. The manufacturing regions of Randfontein (see figure 13) can be divided into two regions:

i) The area north of the town bordering on Hectorton Park and on the east side of the main railway line to Johannesburg. There are two factories in this area: Delmas Milling Company Ltd. and S.A. Oil Mills (Pty) Ltd. Although the above two industries are the 2nd and 3rd largest in Randfontein, they are not situated in the main industrial region.

ii) The proclaimed industrial area: Aureus, Aureus Ext.1 and Aureus Ext. 2 to the south of the town bordering on Homelake and Randfontein. All the other industries are found in this region. The other larger factories are found in Aureus Ext. 2 - Aranda Textile Mills (Pty) Ltd. (the largest)


LAND-USE IN THE INDUSTRIAL AREAS
Figure 13
Aureus Ext.1
Aureus Ext.2
N
Aureus
INSET: area N-E of town
Main Reef Rd.
TYPE OF INDUSTRY
TEXTILE
FOOD
TRANSPORT
ENGINEERING
CAR TRADE (panelbeaters, scrapyards, tyres)
OTHER
scale: 1:5 000

Paton and Baldwins S.A. (Pty) Ltd. (4th largest), J. and P. Coats S.A. Ltd. (5th largest) and N.O.L.A. (~~this factory refused to supply any information at all~~). See figure 13 showing Aureus.

The relative size of each of the abovementioned factories was determined according to the number of people employed by each concern.

Until a few years ago there were panel beaters and smaller engineering firms in the business area of the town but they have all moved out to Aureus leaving no manufacturing concerns at all in the business area. There are a number of smaller businesses on the outskirts of the business area which may still be classified as very light industries. There is a dry - cleaning concern to the west of the business area in Village Street. There is a radiator repair workshop and a lawnmower repair workshop to the north on the outskirts of the business area in Main Reef Road.

All the factories in the industrial areas were given questionnaires to complete (see Appendix). Out of a total of 29 firms found in the industrial areas, 4 refused to supply any information. Three of these firms are small firms; the fourth factory is N.O.L.A. which was mentioned earlier. The only obtainable information concerning N.O.L.A. is that it processes natural products to produce cooking oil and that a total of 445 Bantu (1 female) are employed (this figure was

obtained from the Bantu Administration Offices).

The factories have been divided into two groups. The large factories with a total employment figure of 100 and more and the smaller concerns with 99 and less.

From the Table(16) it can be seen that 5 of the 11 factories listed above are textile factories. It seems that Randfontein's main manufacturing function is the textile industry. The other main type of industry is the food industry (Delmas and S.A. Oil Mills).

A total of 740 Whites work in the above 11 factories, 577 male (78%) and 163 female (22%) - 29% of the total White male workers are employed in the two food factories. Female workers are all office workers. The greatest number of female workers are employed by the textile industry (J. and P. Coats, 20%) and the food industry (S.A. Oil Mills 19%).

A total of 3647 Bantu work in the above 11 factories, 2933 male (80%) and 714 female (20%). Most male workers work in the two food factories (47% of the total male factory workers). The female workers are mostly employed in textile factories, (92% of the total female factory workers).

There is a total of 377 Coloured workers in the above 11 factories. The male workers are found in all types of industries but the majority are found in textile factories

Voeg Nota se gegewens by

TABLE 16

TABLE SHOWING NAME, TYPE OF FACTORY AND STAFF OF THE LARGER FACTORIES

NAME	TYPE OF INDUSTRY	NUMBER OF WORKERS						TOTAL
		WHITE		BANTU		COLOURED		
		M	F	M	F	M	F	
1 Aranda Textile Mills (Pty) Ltd	Textile	39	22	400	460	-	-	921
2 Delmas Milling Co. Ltd.	Milling cereal crops, feed	112	18	740	10	20	-	900
3 S.A. Oil Mills (Pty) Ltd.	Oil Expressors, Food Factories	113	31	630	48	-	-	822
4 Patons and Baldwins S.A.(Pty) Ltd.	Textile	75	23	375	137	1	-	611
5 J and P Coats S.A. Ltd.	Textile	73	32	231	7	5	159	507
6 Avon Wire (Pty) Ltd.	Non-Ferrous Wire Manufacturers	77	13	232	-	20	-	342
7 Advertising Displays (Pty) Ltd.	Advertising	31	12	107	-	45	-	195
8 Philotex (Pty) Ltd.	Textile	12	2	10	-	60	40	124
9 Vianini Pipes S.A. (Pty) Ltd.	Concrete Pipe Manufacturers	4	2	95	1	16	-	118
10 Associated Spinners (Pty) Ltd.	Textile	5	3	60	50	-	-	118
11 Smuts (Bodies, School Buses, Tours)	Vehicle Body Builders, Tours, School Buses	36	5	53	1	11	-	106
TOTAL		577	163	2933	714	178	199	4764
		740		3647		377		

(34% of the total). All the female workers work in the textile factories.

The total workers in the different industries can be summarized as follows:

Textile Industry	2281	47,9%
Food Industry	1722	36,1%
Other Industries	761	16,0%
TOTAL	4764	100,0%

Table 17 shows that all the factories possess company vehicles except Associated Spinners. This firm draws transport from Aranda Textiles because it is a subsidiary firm of Aranda. The firm possessing the most vehicles is Delmas (25 vehicles which is 24% of the total). Delmas Milling has the most heavy vehicles. The reason for this is that West Rand Bakery is part of Delmas Milling and most of the heavy vehicles are bread delivery trucks (54 which is 36% of the total). Mention must be made of the firm Smuts. A total of 56 heavy vehicles is recorded, all 56 are buses (to be discussed later in this section). Most of the private vehicles parked on the terrain or pavement outside belong to white workers.

There are bus services to all the industrial areas transporting most of the Non-White workers.

The greatest number of private vehicles counted was at J. and P. Coats - 80 which is 20% of the total. Only 3 factories have

TABLE 17

TABLE SHOWING TRANSPORT, PARKING AND RAIL FACILITIES OF THE LARGER FACTORIES

NAME	COMPANY VEHICLES	HEAVY VEHICLES	PRIVATE VEHICLES PARKED ON TERRAIN OR PAVEMENT	RAILWAY SIDING
1. Aranda Textile	8	3	50	No
2. Delmas Milling	25	54	55	Yes
3. S.A. Oil Mills	19	15	51	Yes
4. Patons and Baldwins	15	-	45	No
5. J. and P. Coats	5	4	80	No
6. Avon Wire	9	-	20	Yes
7. Advertising Displays	4	16	20	No
8. Philotex	6	1	20	No
9. Vianini Pipes	2	-	10	No
10. Associated Spinners	-	-	5	No
11. Smuts	12	56	40	No
TOTAL	105	149	396	

railway siding facilities. Delmas Milling and S.A. Oil Mills have the largest amount of raw materials and manufactured products. Both these factories have railway sidings. The other firm with a railway siding is Avon Wire.

Production of the larger factories

Aranda Textiles uses the following raw materials:

Acrylic from South Africa, Japan and Italy
Wool from South Africa and New Zealand
Nylon from South Africa
Polyester from South Africa and European Countries

Aranda manufactures mainly rugs and blankets for Government Departments (S.A.R. Prisons, Provincial Administration, Defence Force etc). They also manufacture woollen cloth for clothing. Aranda Textile's production figures are the following:

10 tons per day or 2 000 000 Kg. per year
Blankets 140 000 units, Shawls 250 000 units
Rugs 400 000 units, Piece goods 200 000 metres.

Delmas Milling uses the following main raw materials:

Maize from the Western Transvaal;
Wheat from Marble Hall, Wesselsbron and Bultfontein;
Fish meal, lucern and husks from Brits, Pretoria, Johannesburg;
Oil cakes from Walvis Bay.

The manufactured products include: maize products (e.g. mealie meal), wheat products (e.g. flour) and balanced rations. All the products are marketed in the Pretoria - Witwatersrand area, the Vaal Triangle, Northern Transvaal and Western Transvaal.

The yearly production figures:

Maize products 240 000 metric tons
Wheat products 40 800 metric tons
Rations 144 000 metric tons

S.A. Oil Mills uses the following raw materials:

fish meal, maize germ, groundnuts, sunflower seed, cotton seed and soya beans.

The fish meal comes from Cape Town, maize germ from Delmas Milling (Randfontein), groundnuts and sunflower seed from the Oilseed Control Board, soya beans from Lydenburg Co-op and cotton seed from Barberton. The manufactured products are: edible oil, oil cakes, peanut butter and dog food. These are supplied to the whole of the Republic, defatted germ is exported to Europe. The Company did not want to quote any production figures.

Paton and Baldwins uses acrylic and raw wool as raw materials. These materials come from the R.S.A., United Kingdom, France, Japan and the U.S.A. The manufactured products are hand knitting and industrial yarns for the R.S.A. market. The company regards the production figures as classified.

J. and P. Coats uses the following raw materials:

cotton yarn from Natal,
staple spun polyester from Natal and the United Kingdom,
polyester from Japan,
core spun from Germany and the United Kingdom,
balmed nylon from Transvaal.

The cotton and synthetic sewing threads are the manufactured products. The products are marketed throughout the Republic and also exported. The production figure is quoted as 732 000 Kg. per year.

Avon Wire uses the following raw materials:

copper from Phalaborwa,
aluminium from Alustang (Richards Bay),
brass from firms on the Witwatersrand.

The manufactured products are copper, aluminium and brass wire and sections. The marketing takes place in the R.S.A. mainly to electrical wholesalers and contractors.

The factory classified in the tables as Smuts, includes 3 firms on one site. These are: Smuts Bodies, N.L. Smuts, and West Rand Tours. N.L. Smuts is not a factory. It is a school-bus contractor firm with 40 school buses. These buses serve the Randfontein and Krugersdorp schools. West Rand Tours is the firm arranging and conducting school educational tours and other bus tours with 16 tour buses. Smuts Bodies manufacture school and touring buses, canopies and trailers. The production figures quoted are: an average of 7 buses are built monthly (98% of total production), 3 canopies per month (2% of total production). The trailers are tractor trailers which are built to order. The average production is ± 13 trailers per month.

Seven factories from Table 16 were discussed above. The other 4 are small or have no manufacturing function. Another reason for not discussing them is that these firms did not want to supply more information than is found in the table.

Other Factories

In this section there are not many firms with a manufacturing function. All the firms in this section have fewer than 100 workers.

As can be seen from Table 18 the factories listed are very small and there are other types of firms without a manufacturing function (wholesale, panelbeater and transport). All the engineering firms are under this section. The engineering firms employ a total of 162 (34%) of the total workers for this section (477). There are more males than females employed in this section, 445 (93,3%) males and 32 (6,7%) females.

The total workers in the different industries can be summarized as follows:

Other Industries	175	36,7%
Engineering Industry	162	33,9%
Transport Industry	102	21,4%
Food Industry	38	8,0%
Total	477	100,0%

TABLE 18

TABLE SHOWING NAME, TYPE OF FACTORY AND STAFF OF THE SMALLER FACTORIES

NAME	TYPE OF FACTORY	NUMBER OF WORKERS						TOTAL
		WHITE		BANTU		COLOURED		
		M	F	M	F	M	F	
1. Matus and Co. (Pty) Ltd.	Wholesalers	16	11	41	1	7	1	77
2. Rio Rita Tankers (Pty) Ltd.	Transport	8	3	45	1	-	-	57
3. P.H.A. Engineering (Pty) Ltd.	Mining Engineering	9	1	42	-	-	-	52
4. Botha Transport (Pty) Ltd.	Transport	9	1	33	-	2	-	45
5. Westeel Engineering	General Engineering	6	3	35	-	-	-	44
6. Tiger Miles Protein Industries (Pty) Ltd.	Food	8	4	24	1	1	-	38
7. W.F. Brunner	Ventilation Engineers	1	-	34	-	-	-	35
8. Kimpi Wire (Pty) Ltd.	Non-Ferrous Wire Manufacturers	5	1	25	-	-	-	31
9. Bantu Beer Brewery	Bantu Beer Brewery	6	1	19	-	-	-	26
10. Vorster Erection	Building Structures of Steel	9	-	15	-	1	-	25
11. Randfontein Panel Beaters (Pty) Ltd.	Panel Beaters and Spray Painters	7	1	9	-	-	-	17
12. Studios of Decorative Arts	Electrical Light Fittings	2	1	9	1	3	-	16
13. Hollandia Woodcraft	Carpenters	4	-	4	-	-	-	8
14. Randfontein Forge	Engineering Works	1	-	5	-	-	-	6
	TOTAL	91	27	340	4	14	1	477
		118		344		15		

It will be noticed from Table 19 that the two transport firms have the largest number of heavy vehicles 52 (72%) of the total of 72. Since all the firms are small, a small number of private vehicles are parked on the terrain or on the pavement. Only 2 firms have railway sidings - Matus Wholesaler and Tiger Miles.

Summary

The labour in all the factories of Randfontein can be summarized as follows:

Textile Industry	2281	43,5%
Food Industry	1760	33,6%
Engineering Industry	162	3,1%
Transport Industry	102	1,9%
Other Industries	936	17,9%
Total	5241	100,0%

Refer to the previous table for a list of the other industries. It is clear from the above figures that Randfontein's main manufacturing industry is the textile industry, employing 43,5% of the total industrial labour force. The industry that ranks second is the food industry, employing 33,6% of the total industrial labour force. The two industries together employ just over 77% of all labour classified under industries.

TABLE 19

TABLE SHOWING TRANSPORT, PARKING AND RAIL FACILITIES OF THE SMALLER FACTORIES

NAME	COMPANY VEHICLES	HEAVY VEHICLES	PRIVATE VEHICLES PARKED ON TERRAIN OR PAVEMENT	RAILWAY SIDING
1. Matus	12	6	13	Yes
2. Rio Rita Tankers	5	30	7	No
3. P.H.A. Engineering	2	2	6	No
4. Botha Transport	2	22	6	No
5. Westeel Engineering	6	3	3	No
6. Tiger Miles	9	1	4	Yes
7. W.F. Brunner	2	-	1	No
8. Kimpi Wire	-	-	2	No
9. Bantu Beer Brewery	-	6	4	No
10. Vorster Erection	2	-	6	No
11. Randfontein Panel Beaters	2	1	6	No
12. Studios of Decorative Arts	2	-	2	No
13. Hollandia Woodcraft	1	1	3	No
14. Randfontein Forge	1	-	1	No
TOTAL	46	72	64	

6.3 MINES

Randfontein owes its birth and growth to the mining industry. The development of the mining industry has been discussed in Chapter 3.

Randfontein Estates Gold Mining Company is the only company operating inside the municipal boundary of Randfontein. This company had seen a decline in gold production up to 1974 when new shafts started coming into production. Up till 1965 the mines main income came from uranium. Figure 14 illustrates all aspects of the mining industry in Randfontein.

Mine Housing

During 1974, 345 stands were purchased in Finsbury, 38 stands in Robin Park for development, and the building of 40 houses was started during 1975. The 38 stands are on property owned by the mine and is adjacent to Robinson Lake. At the moment the mines possess a large number of modern houses in the newer residential areas of Randfontein. There are many mine-residential areas which have the older type of mine houses. There are hostels for Bantu labourers and White workers. Extensions to the Mine Hospital will take place during 1975 and some of the sections have been occupied.

Most of the White workers live in mine-residential areas

or in Finsbury which is a privately owned township.

Mining

-Randfontein Section

Areas previously mined by the company are being reworked. This rescue mining is on the Black Reef horison. The gold obtained here shows an average value of 15,74 grams per ton over a channel width of 26 centimetres.

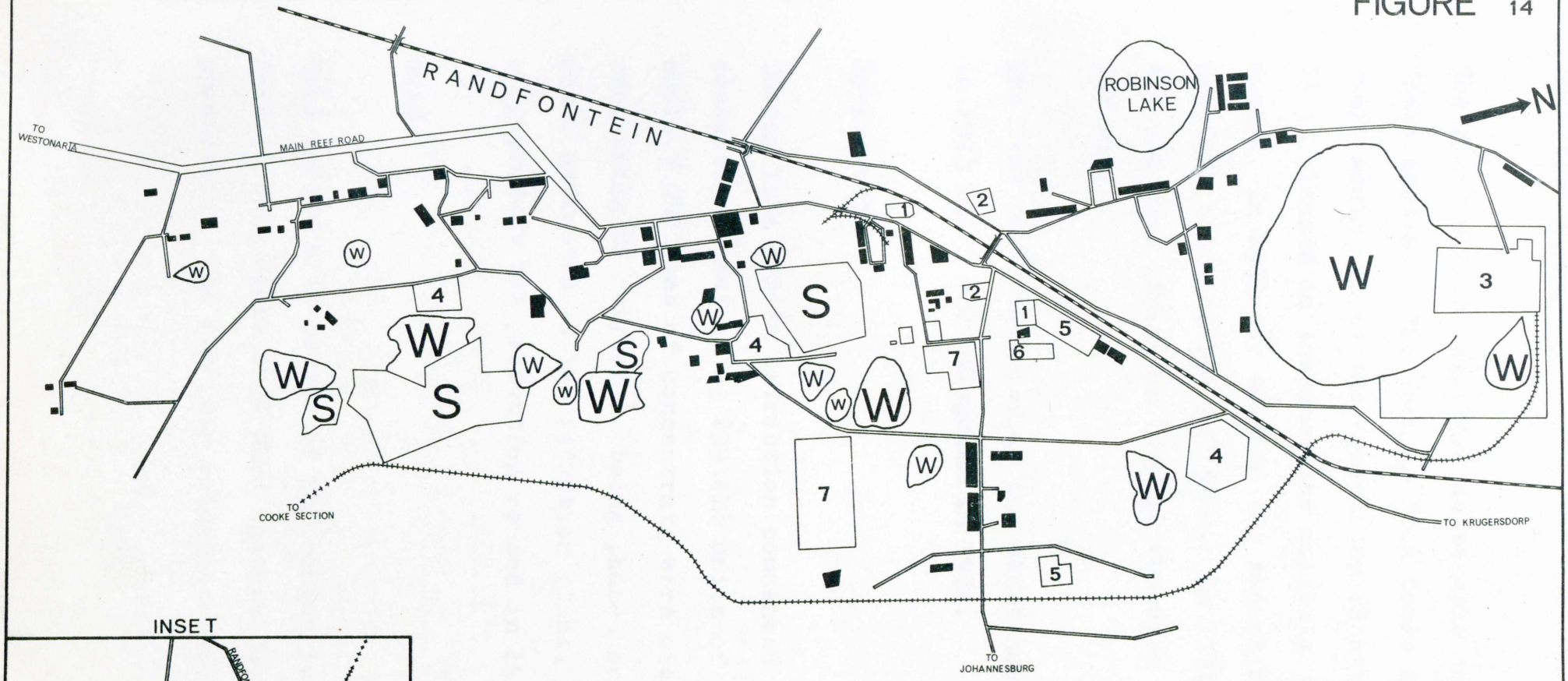
-Cooke Section

These shafts are outside the municipal boundary. Production started in March, 1974. A railway line has been constructed between Cooke No. 1 Main Shaft and No. 32 Shaft in the Randfontein Section. This was completed at the end of 1974. The ore is thus transported by rail from Cooke Section to the reduction plant at the Randfontein Section. The distance is 16 Kilometres. (See figure 14).

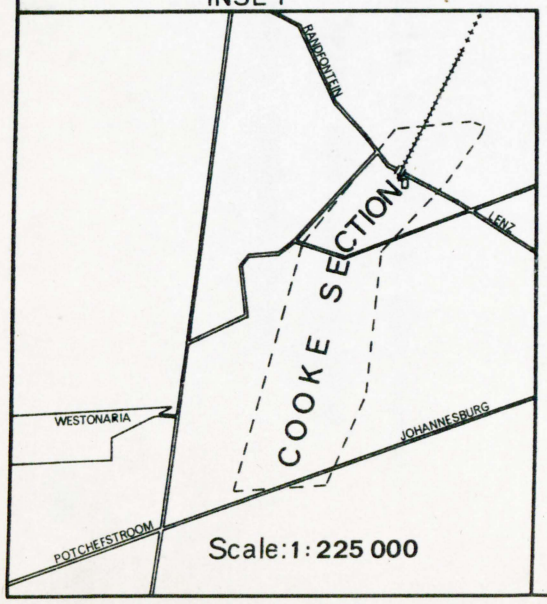
In 1974 the tonnage milled from this section totalled 349 000 tons. At the moment the tonnage milled is about 67 000 tons per month. Toward the end of 1975, the expected milling tonnage from this section will be 70 000 tons per month. The main problem experienced in Cooke Section is the intersection of water in dykes causing delays owing to flow having to be contained by cementation.

MAP SHOWING MINES

FIGURE 14



INSET



SCALE: 1:30 000

1 – OFFICES
2 – RECREATION
3 – REDUCTION WORKS
4 – BANTU HOSPITAL
5 – TRAINING CENTRE
6 – BANTU CHURCHES
7 – BANTU HOSTEL
■ – MINE HOUSES
W – WASTE DUMP
S – SLIME DUMP

Reduction Plant

The plant will be expanded to be able to work the ore from Cooke Section. The tonnage from Cooke Section is increasing every month and at the moment the plants' capacity is too small. It is planned to increase the capacity to 105 000 tons per month. In 1973 ore sent to the reduction plant from both sections totalled 101 307 tons. In 1974 this increased to 408 318 tons giving an average recovery grade of 13,77 grams per ton.

The fine gold recovered at the plant amounted to 396 Kilograms in 1973 and 5 622 Kilograms in 1974.

By-products

During 1974 pyrite extraction commenced and 8 000 tons of concentrate containing 299 416 units of sulphur were produced while 7 295 tons of concentrate were dispatched. The recovering of sulphur is being phased out. Silver is another metal extracted at the reduction plant. Uranium used to be a by-product but production ceased in 1965.

Gold

Gold is the main source of the company's income at the moment. This is only since 1974 when the new Cooke Section started production. The new gold prices on world markets have

helped to give this mine a new life. This can be shown by comparing the company's profits since 1965 to 1974. It must be remembered that the high figure for 1974 reflects mainly the Cooke Section's production.

YEAR	PROFIT AFTER TAX (IN RANDS)
1965	3 418 000 (uranium)
1966	294 000
1967	117 000
1968	287 000
1969	249 000
1970	287 000
1971	269 000
1972	193 000
1973	293 000
1974	12 601 000 (Gold from Cooke section)

Labour

The number of workers in the Randfontein Estate Gold Mines has increased greatly in the past 2 years because of the development of the Cooke Section. The tables to follow show the number of White and Bantu workers employed by the mine.

TABLE 20

TABLE SHOWING LABOUR ANALYSIS (RANDFONTEIN ESTATES) FOR WHITE OFFICIALS AND UNION MEN COMBINED (JULY 1974)

TYPE OF WORK	UNDERGROUND	SURFACE	TOTALS
Mining	107	14	121
Administration	4	100	104
Engineering	47	112	159
Milling	-	23	23
Grand Total	158	249	407

TABLE 21

TABLE SHOWING LABOUR ANALYSIS (RANDFONTEIN ESTATES) FOR BANTU WORKERS (JULY 1974)

TYPE OF WORK	UNDERGROUND	SURFACE	TOTAL
Mining	1900	177	2077
Administration	-	606	606
Engineering	194	206	400
Milling	-	143	143
Grand Total	2094	1132	3226

The mines are continuously facing Bantu labour shortages. The old shafts have to be excluded from the producing shafts because of labour shortage.

6.4 TRAFFIC

6.4.1 STREET PATTERNS

"The major roads of the original urban nucleus and their point of intersection or focus often are still important in the city of today. The street pattern by which the city was laid out or which evolved as the city grew is of enormous significance in explaining the present transportation complex."

(Murphy, 1966, page 236).

Randfontein developed along the Main Reef Road which was the main road from Johannesburg through the West Rand towns to the Western Transvaal, the same can be said about the railway line. This development gave rise to the particular street patterns found in Randfontein.

Randfontein does not have a pronounced topography and is therefore relatively flat. The type of street pattern was therefore not affected by the relief. (Refer to Map Fig. 3 p. 7 which shows the street patterns to be discussed).

Regular Street Pattern (The Grid or rectangular pattern)

Most of Randfontein developed along this pattern. The town area shows roads crossing each other at right angles and forming rectangular blocks. Homelake and Randgate show exactly the same type of pattern. Nowhere are there square blocks.

Finsbury has a basic regular pattern with a slight modification: the end of some blocks mark the termination of the road which at this point takes a turn making the road shorter.

Irregular Street Patterns

The radial or axial pattern is found in the residential area of Greenhills. The streets radiate or diverge in straight lines from a common centre or from a few subcentres. Cross streets between each of two radial streets may be arcs of circles or sides of pologons. There are basically two centres: the crossing of Kenneth and Greenhills Avenues, and the crossing of Greenhills Avenue and North Way.

Other

The industrial area's street pattern is irregular in that the stands are large and some stands have one boundary on the railway line which is curved.

Mohlakeng (Bantu Township) and Toekomsrus (Coloured Township) have a combination of the regular and irregular patterns. Some streets run parallel to each other forming rectangular blocks, others arc, giving a radial pattern. The two patterns are combined to give an unusual pattern.

General

Most of the streets are single carriage roads of normal width. The dual-carriage roads are:

Main Reef Road,

Van Riebeeck which becomes Tambotie which becomes Lazar,

Homestead Avenue.

The roads which are planned dual carriage roads but at the moment are still single carriage roads are:

Greenhills Avenue,

Kenneth Avenue,

Palm Avenue.

All the streets in Randfontein town area are tarred. In the residential areas of Homelake, Homelake Ext. 1, Homelake Ext.2 and Randgate all the streets are tarred.

In Greenhills all the streets east of Greenhills Avenue are tarred with the exception of seven streets. No streets north of Suikerbos Street are tarred.

One street in Westergloor is tarred because most of the houses front on this street.

Finsbury is a new residential area and only two streets are tarred at the moment. Three roads in the Industrial Area are not tarred (Wol, Commer and Foden).

6.4.2 VEHICLES

Registered Vehicles

TABLE 22

TABLE SHOWING REGISTERED VEHICLES 1930-1973

YEAR	VEHICLES	WHITE	%	BANTU	%	COLOUR-EDS	%	INDIAN	%
1930-1940	1500	1492	99,5	0	0	5	0,3	3	0,2
1940-1950	3500	3430	98,0	10	0,3	50	1,4	10	0,3
1950-1960	8000	7690	96,0	150	1,9	150	1,9	10	0,2
1960-1972	15000	13240	88,26	1500	10,0	250	1,66	10	0,15
1973	16510	14000	84,8	1500	9,08	1000	6,06	10	0,06

Discussion of the above Table

The percentage of cars owned by Whites has always been higher than the percentage owned by other groups. From 1930 to 1973 the percentage of vehicles owned by Whites decreased from 99,5% to 84,8%.

Bantu vehicles owners increased from 1930 (0%) to 1972 (10%). It will be noticed that in 1973 the percentage dropped (9,08%). The number of vehicles in 1972 and 1973 remained constant.

Coloured vehicle owners increased from 1930 (0,3%) to 1973

(6,06%). It will be noticed that the number of vehicles owned in 1972 was 250 but in 1973 the number increased to 1000, giving an increase of 400%.

Indian vehicle owners increased from 1930 (3 vehicles) to 1950 (10 vehicles). Since 1950 the number of vehicles owned has stayed the same and in 1973 the Indian-owned vehicles made up only 0,06% of the total number of registered vehicles.

Increase in Number of Vehicles

TABLE 23

TABLE SHOWING INCREASE IN THE NUMBER OF VEHICLES

NO.	YEAR	VEHICLES	WHITE	BANTU	COLOUREDS	INDIAN
1	1940-1950	2000	1938	10	45	7
2	1950-1960	4500	4260	140	100	0
3	1960-1972	7000	5550	1350	100	0
4	1972-1973	1510	760	0	750	0

If both Nos. 1 and 2 are divided by 10 and No. 3 by 12 (i.e. the period between counts) the following table can be drawn up. This table will only show very broad averages.

NO.	YEAR	AVERAGE NUMBER OF VEHICLES PER YEAR				
		TOTAL	WHITE	BANTU	COLOUREDS	INDIAN
1	1940-1950	200	193	1	5	1
2	1950-1960	450	426	14	10	0
3	1960-1972	583	463	112	8	0
4	1972-1973	1510	760	0	750	0

It will be noticed that in the year 1972-1973 the total increase in vehicles was nearly 300%. The greatest increase is shown in the White and Coloured ownership; the Coloureds making up almost half of the total number of vehicles registered in 1972-1973.

A Summary of Vehicles for 1972

Cars	10925
Commercial Vehicles	1887
Buses	107
Motor cycles	501
Other	1580
Total	15000

(Other: Station wagons, caravans, tractors, three wheelers).

6.4.3 VEHICLE COUNTS AND TRAFFIC FLOW IN RANDFONTEIN

~~Screen line counts~~ Cordon Counts

Cordon Lines
~~Screen lines~~ are lines which are used to show the boundaries of a geographical region, being the C.B.D. in this case. The Cordon
~~screen~~ line cuts all roads leading in or out of the C.B.D.
Cordon
~~Screen~~ ~~line~~ counts are used to count the traffic crossing the lines into or out of the C.B.D.

The reason for taking Cordon ~~screen line~~ counts is to determine the

volume of traffic entering and leaving the C.B.D. during certain periods. The positions of the counting locations (refer to map)were determined by the delimitation of the C.B.D. according to the shopping centre which is situated mainly in Main Reef Road. (Figure 15)

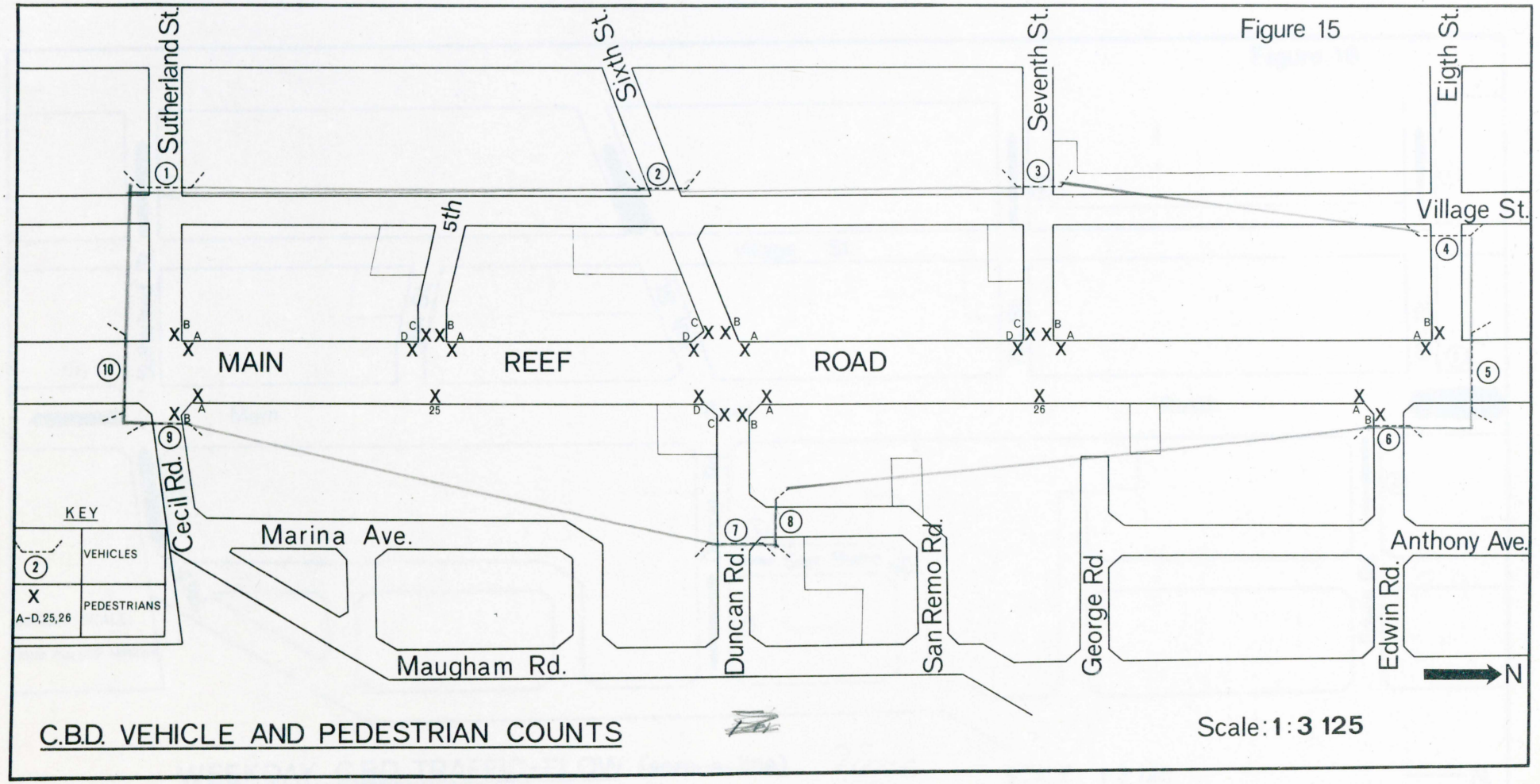
The counting was recorded from 08h00 - 17h00 on a weekday and from 08h00 - 13h00 on a Saturday. For more detailed analysis of figures refer to Appendix Tables 1a and 1b.

Counts on a Weekday

This count was done on Wednesday 28th March, 1973. For the location of counting positions refer to the map Fig. 15 and Fig.16 showing a flow-line map.

From the information gathered it will be seen that most traffic is found along the Main Reef Road entering from the north of the town (Total 6114) and 6th Street (Total 3686) which enters the approximate centre of the C.B.D. Most traffic along 6th Street is the traffic into the C.B.D. (Total 2210). The main reason for this is that it extends out from the C.B.D. across the only railway bridge in the immediate area. This bridge is the only means of entering the town area for most of the residential areas to the west of the town. The Main Reef Road from the north carries twice the amount of traffic than that carried by 6th Street. (Main Reef Road - 6114, 6th Street - 3686). The reason for this heavy traffic at this point is that commercial vehicles enter the town from

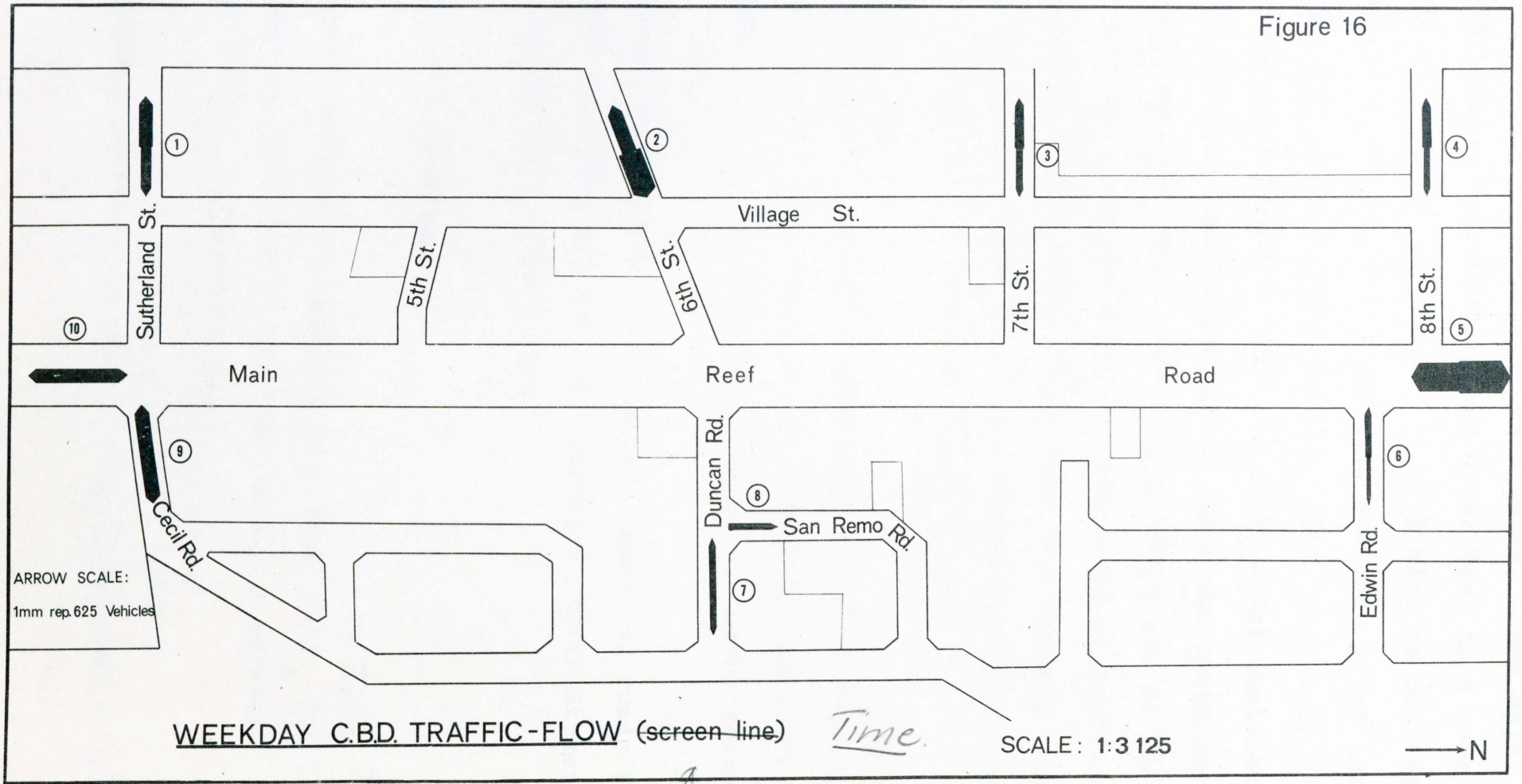
Figure 15



C.B.D. VEHICLE AND PEDESTRIAN COUNTS

Scale: 1:3 125

Figure 16



I— Haal dit asb uit.

the north for deliveries to businesses. They enter from the north because Johannesburg and other West Rand towns are accessible along this road. It will also be noticed that more vehicles leave the C.B.D. at this northern point that enter it at the same point. (From C.B.D. - 3143, to C.B.D. - 2971). The reason for this is that the given total includes vehicles which may have entered the C.B.D. from the south and passed through the town leaving via the northern end of the C.B.D. The road carrying the third heaviest load of traffic is Cecil Road (Total 2222). This road is a by-pass through the town and traffic-flow is in both directions approximately the same.(From C.B.D. - 1176, to C.B.D. - 1046)

The percentage of traffic entering the C.B.D. from the south, along the Main Reef Road, is comparatively small (Total 2078) because of no large residential areas or nearby towns.

The other roads are mainly smaller connecting roads and their traffic densities are low, for example: Edwin Street - Total 452 and San Remo - Total 288.

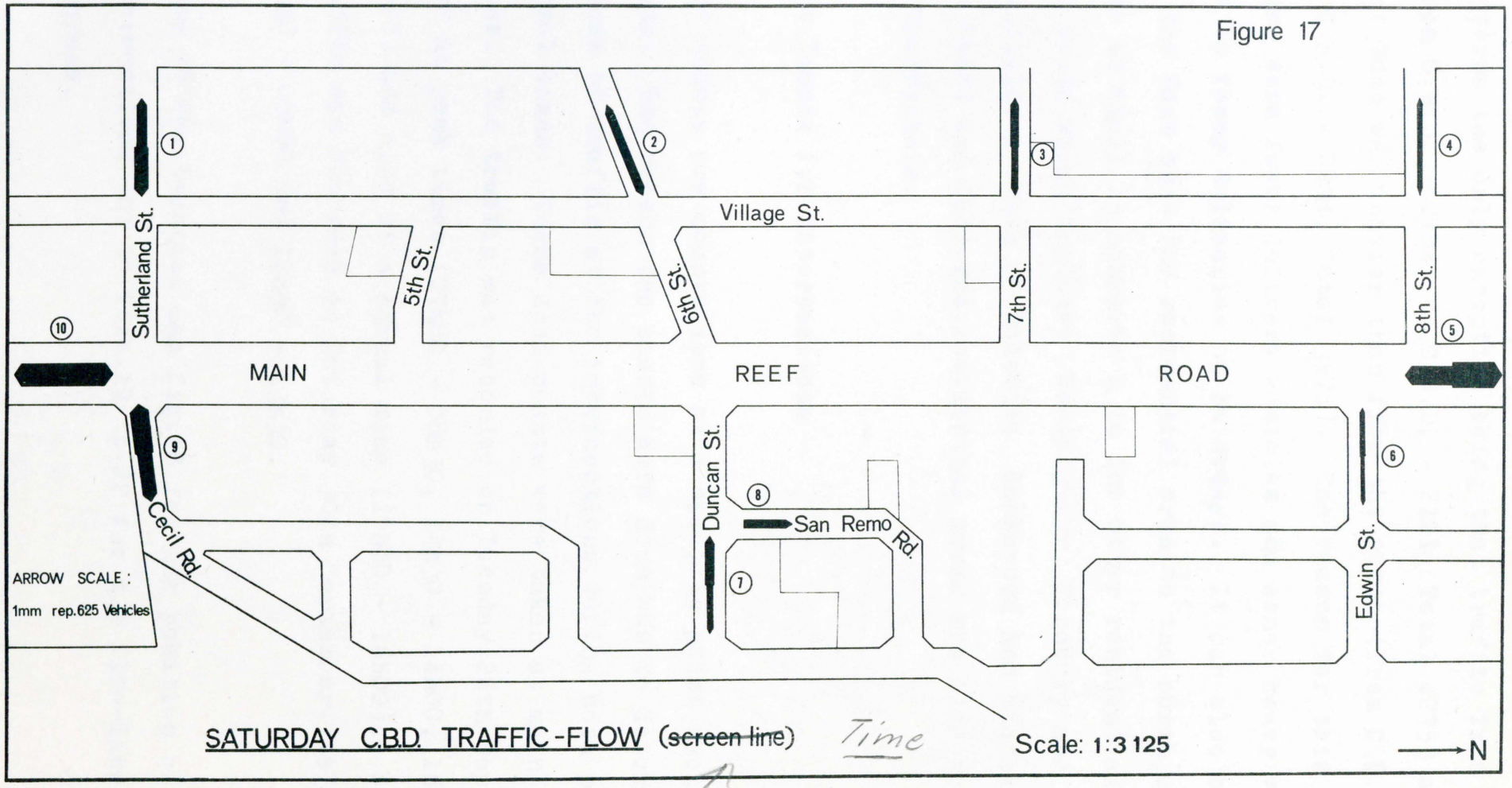
Counts on a Saturday

Time ?

The count was done on Saturday 26th May, 1973. The location of counting positions is the same as for a weekday. Refer to fig.17 showing a flow-line map.

The traffic patterns for the Saturday were similar to weekday

Figure 17


Village St.
Sutherland St.
5th St.
6th St.
7th St.
8th St.
MAIN
REEF
ROAD
Cecil Rd.
Duncan St.
San Remo Rd.
Edwin St.
ARROW SCALE :
1mm rep.625 Vehicles
SATURDAY C.B.D. TRAFFIC-FLOW (screen line)
Time
Scale: 1:3 125
N

patterns the only exception being that traffic from the south (From C.B.D. - 2154, to C.B.D. - 2121, Total 4275) along Main Reef Road was heavier than from the north (From C.B.D. - 1684, to C.B.D. - 2291, Total 3975). The reason for this being that there were fewer delivery vehicles and other heavy vehicles due to fewer deliveries on Saturdays. It can also be ascribed to the fact that the residential area to the north of the town area is small in comparison to the other residential areas to the south which include: Westergloor, Finsbury and the smallholding areas of Pelzvale, Kocksoord and Middelvlei. The Bantu and Coloured residential areas are also to the south of Randfontein.

Spot Counts for Intersections

Spot counts are counts done at a specific point such as cross-roads. The reason the counts were done was to determine the volume of traffic at the intersections during both peak and normal times. These spot counts were taken at main intersections. The traffic was recorded on Tuesday 26th September, 1972 at peak times (07h00 - 08h30, 12h30 - 14h00, 16h00 - 17h00) and also at a normal time (15h00 - 16h00). Saturday traffic was recorded on Saturday 30th September, 1972 at 07h30 - 09h00 and 12h30 - 13h30.

Refer to the location map fig.18 for the position of the intersections and to figs.19 to 22 for the flow-line diagrams.

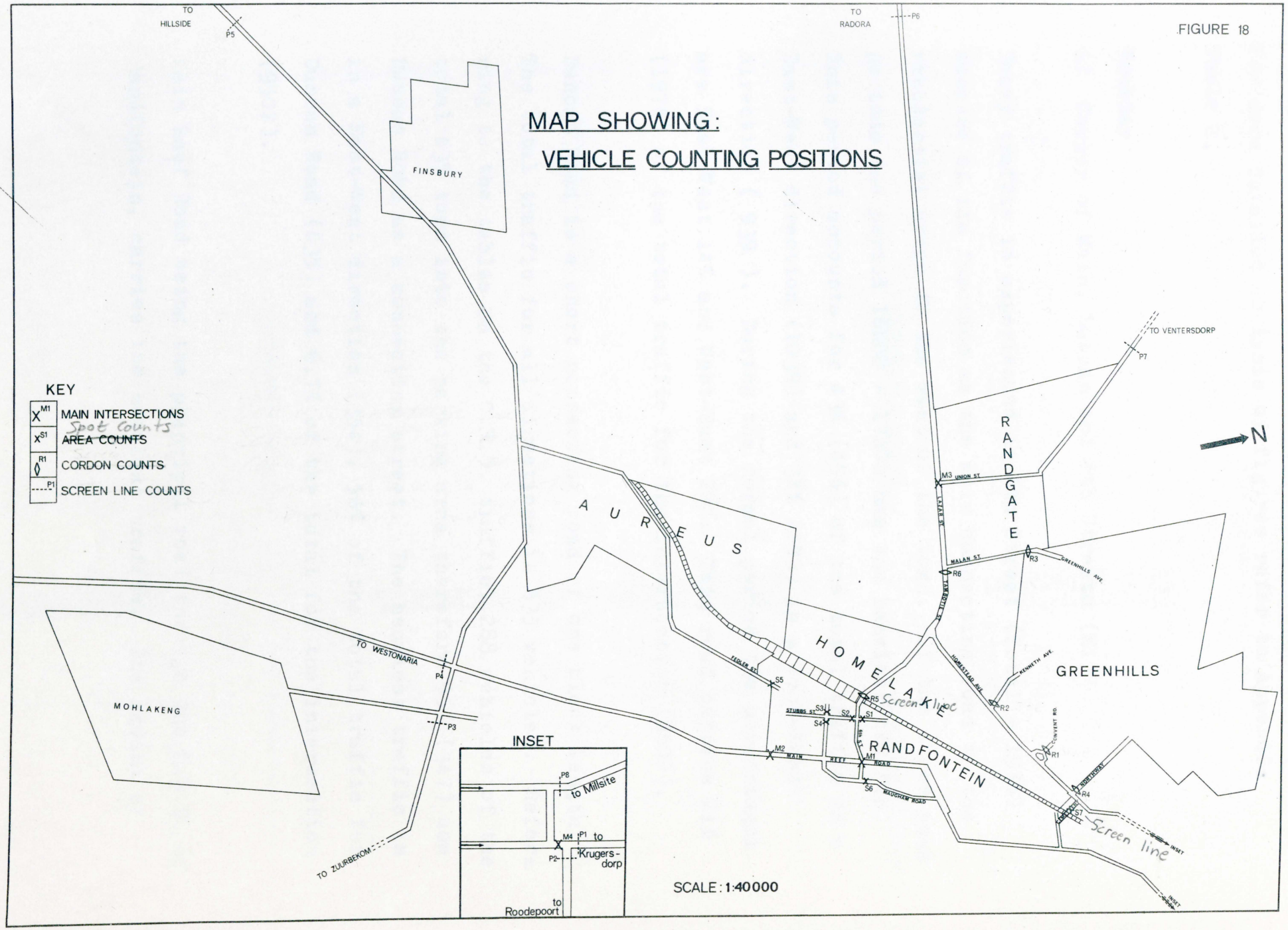


FIGURE 18
MAP SHOWING:
VEHICLE COUNTING POSITIONS
KEY
MAIN INTERSECTIONS
Spot Counts
~~AREA COUNTS~~
CORDON COUNTS
SCREEN LINE COUNTS
TO HILLSIDE
P5
TO RADORA
P6
TO VENTERSDORP
P7
FINSBURY
AUREUS
RANDGATE
HOMELAKE
RANDFONTEIN
GREENHILLS
MOHLAKENG
TO WESTONARIA
P4
P3
TO ZUURBEKOM
M3
UNION ST
LAZAR ST
MALAN ST
R3
GREENHILLS AVE
R6
TAMBOTIE ST
HOMESTEAD AVE
KENNETH AVE
R2
CONVENT RD
R1
NORTHWAY
R4
S7
Screen line
INSET
FEDLER ST
S5
R5
Screen line
STUBBS ST
S3
S2
S1
S4
6th ST
M2
MAIN REEF ROAD
M1
S6
MAUGHAM ROAD
INSET
P8
to Millsite
M4
P1
to Krugers-dorp
P2
to Roodepoort
SCALE: 1:40000
N

For more detailed analysis of figures refer to Appendix Table 2.

Weekday

i) Corner of Main, Duncan and 6th Streets (M1)

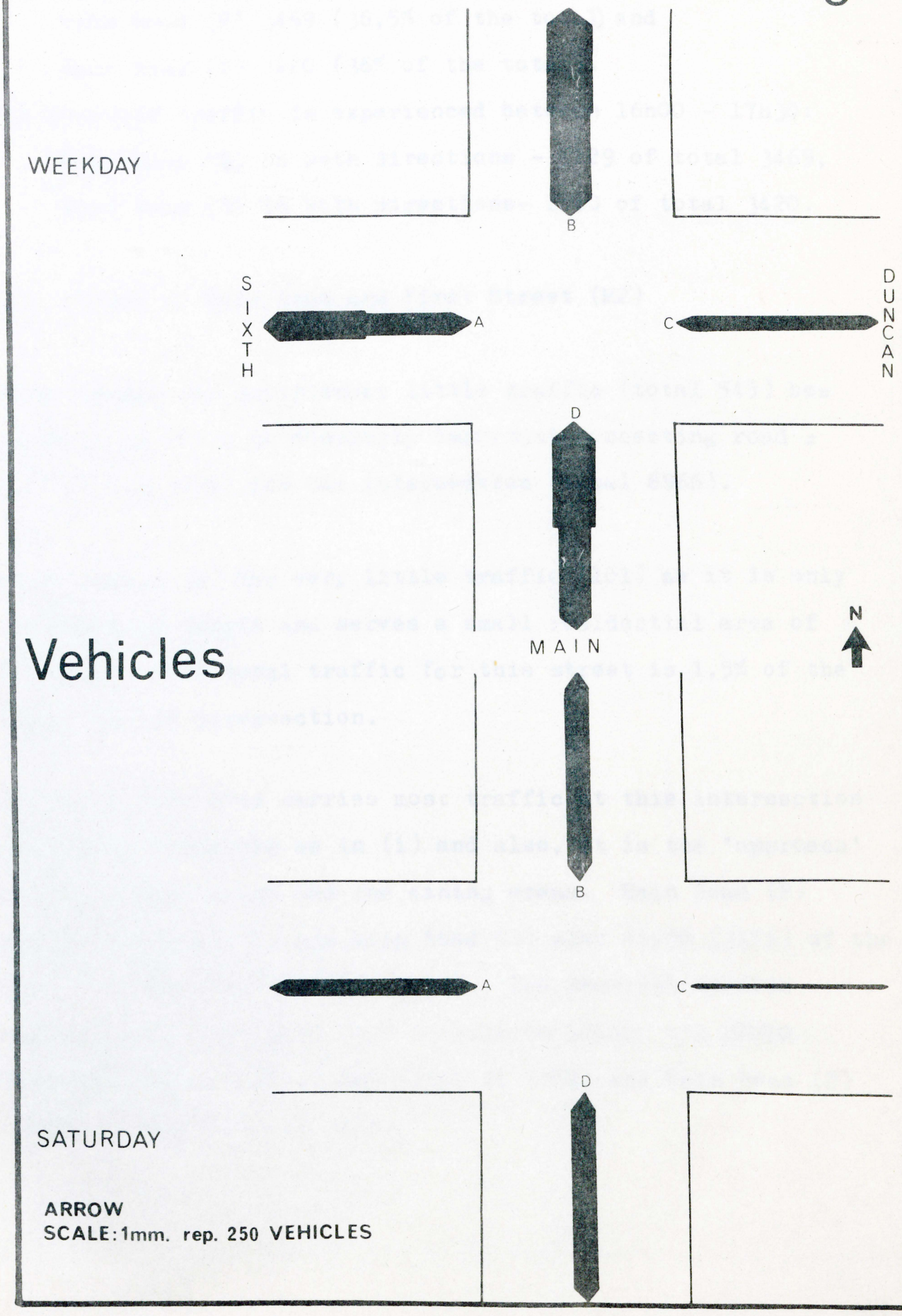
Heavy traffic is experienced in 6th Street (Total - 1978) because of its function as the main connecting road to the residential areas to the west of the town. Of the three peak periods the period 16h00 - 17h00 has the heaviest traffic. This period accounts for 43% (456) of the total traffic in a East-West direction (1039) and 32% (299) in a West-East direction (939). During the normal period the percentages are East-West 14% and West-East 20%. This road carries 21% (1978) of the total traffic for the intersection (9502).

Duncan Road is a short connecting road of one block length. The total traffic for all directions is 635 vehicles. Referring to the tables on the C.B.D. traffic, 288 vehicles of the total 635 turn into the parking area therefore 55% (347) use Duncan Road as a connecting street. The heaviest traffic is in a East-West direction (354), 56% of the total traffic for Duncan Road (635) and 6,7% of the total for the intersection (9502).

Main Reef Road being the principal road through the C.B.D. of Randfontein, carries the heaviest traffic. The amount of

C/O MAIN/DUNCAN/6TH ST.

Fig. 19



traffic in both directions for the two roads of the inter=section is approximately the same:

Main Road (B) 3469 (36,5% of the total) and

Main Road (D) 3420 (36% of the total).

The heaviest traffic is experienced between 16h00 - 17h30:

Main Road (B) in both directions - 1229 of total 3469,

Main Road (D) in both directions- 1240 of total 3420.

ii) Corner of Main Road and First Street (M2)

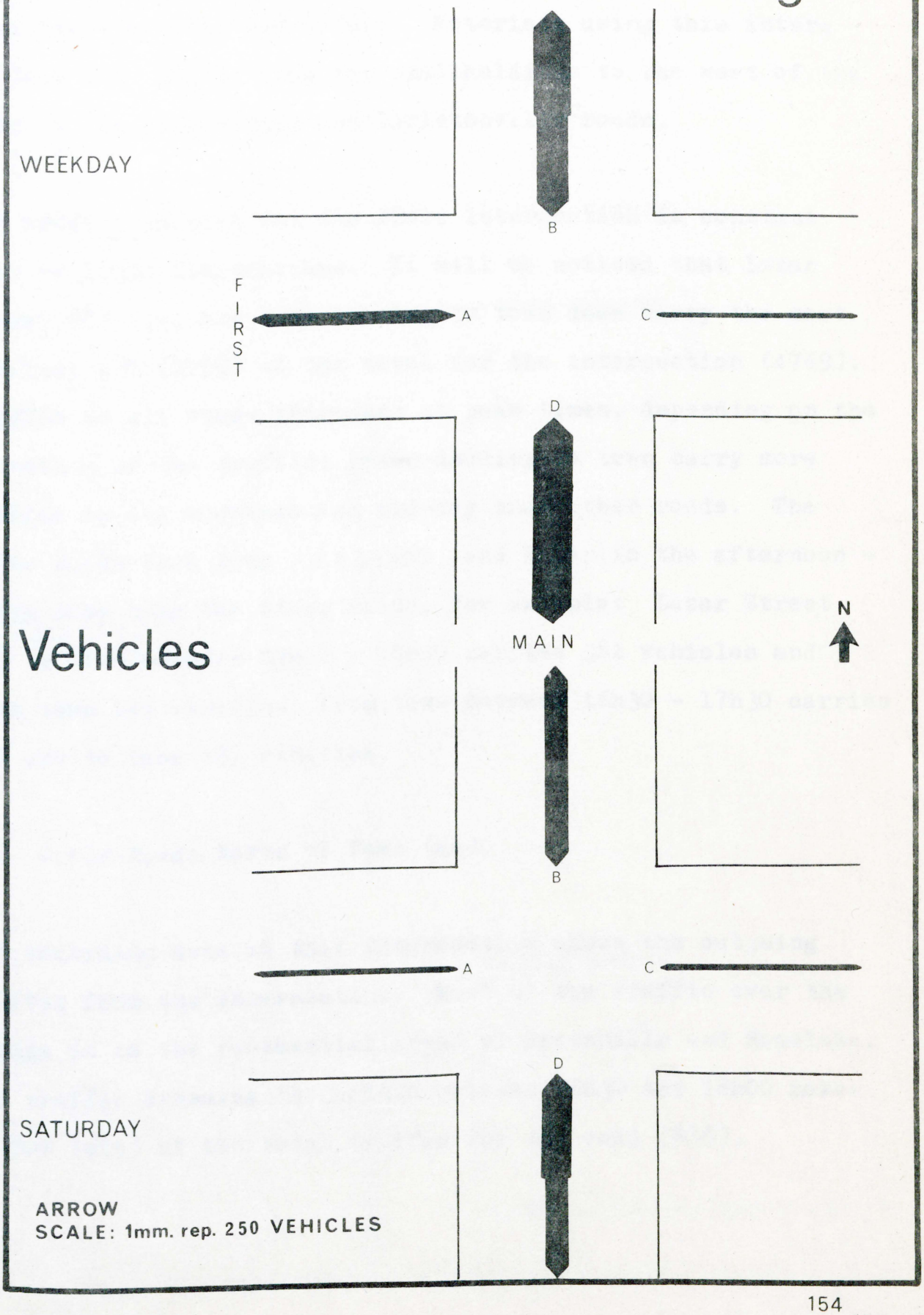
First Street (A) experiences little traffic (total 545) be=cause it is not a particularly important connecting road = 7,8% of the total for the intersection (total 6966).

First Street (C) has very little traffic (101) as it is only one block in length and serves a small residential area of 20 houses. The total traffic for this street is 1,5% of the total for the intersection.

The Main Reef Road carries most traffic at this intersection for the same reasons as in (i) and also, it is the 'approach' side from Westonaria and the mining areas. Main Road (B) carries 45,8% (3164) and Main Road (D) also 45,8% (3156) of the total for the intersection (6966). The heaviest traffic experienced on the Main Road is between 16h00 and 17h30 Main Road (B) - 1109 of the total of 3164, and Main Road (D) - 1165 of the total of 3156.

C/O MAIN/1ST ST.

Fig.20



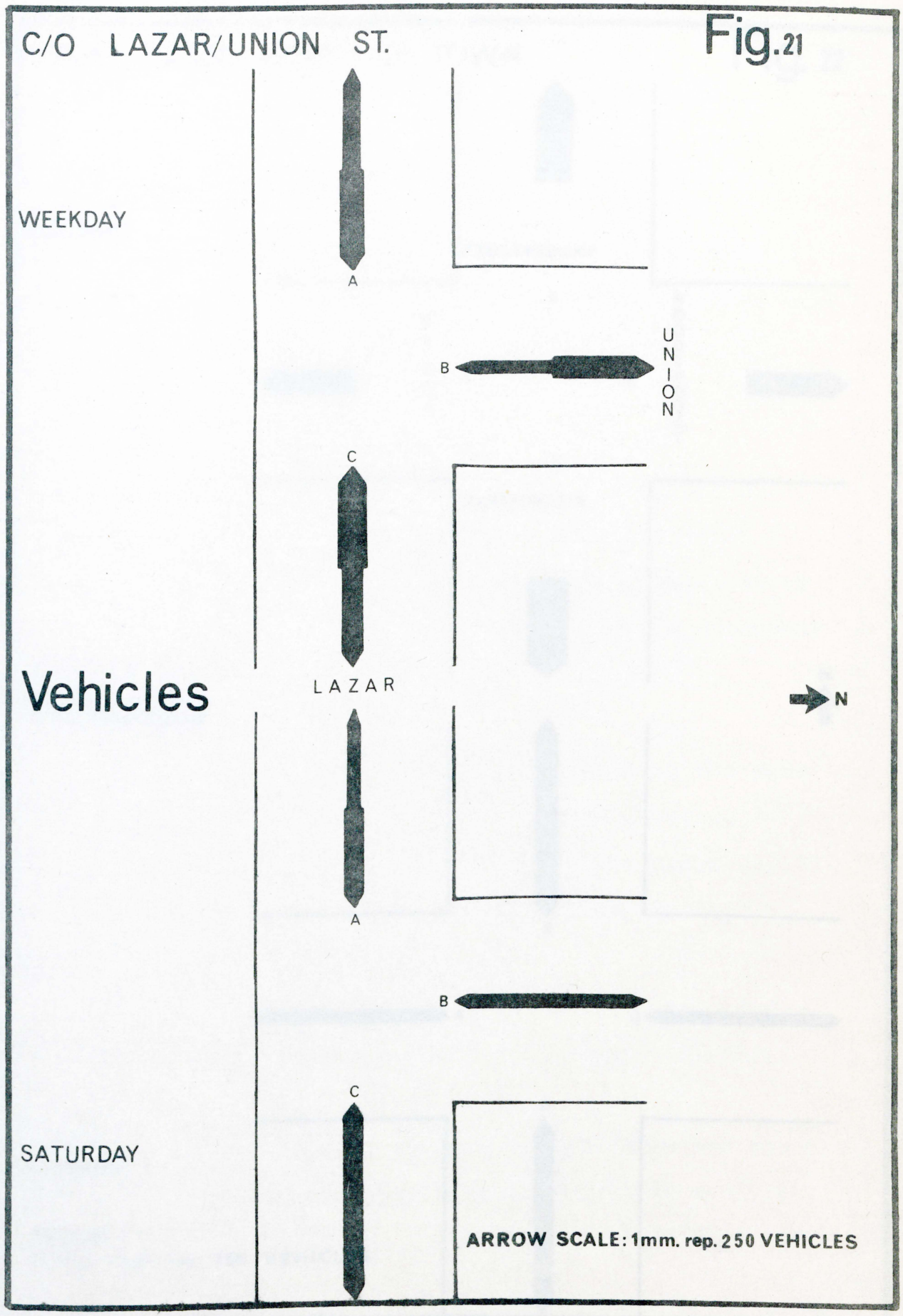
iii) Corner of Lazar and Union Street (M3)

This intersection is found in Randgate on the road entering from Carletonville and Rodora. Motorists using this intersection come mainly from the smallholdings to the west of the town on the Ventersdorp and Carletonville roads.

The traffic pattern for the whole intersection is constant with no large fluctuations. It will be noticed that Lazar Street (C) i.e. the side leading to town does carry the most traffic; 43% (2056) of the total for the intersection (4769). Traffic on all roads increases at peak times, depending on the direction of the traffic; roads leading to town carry more traffic in the mornings and mid-day than other roads. The other roads from town - at 13h00 and later in the afternoon - carry more than the other roads, for example: Lazar Street (C) to town between 07h00 - 08h30 carries 381 vehicles and from town 149 vehicles, from town between 16h30 - 17h30 carries 405 and to town 181 vehicles.

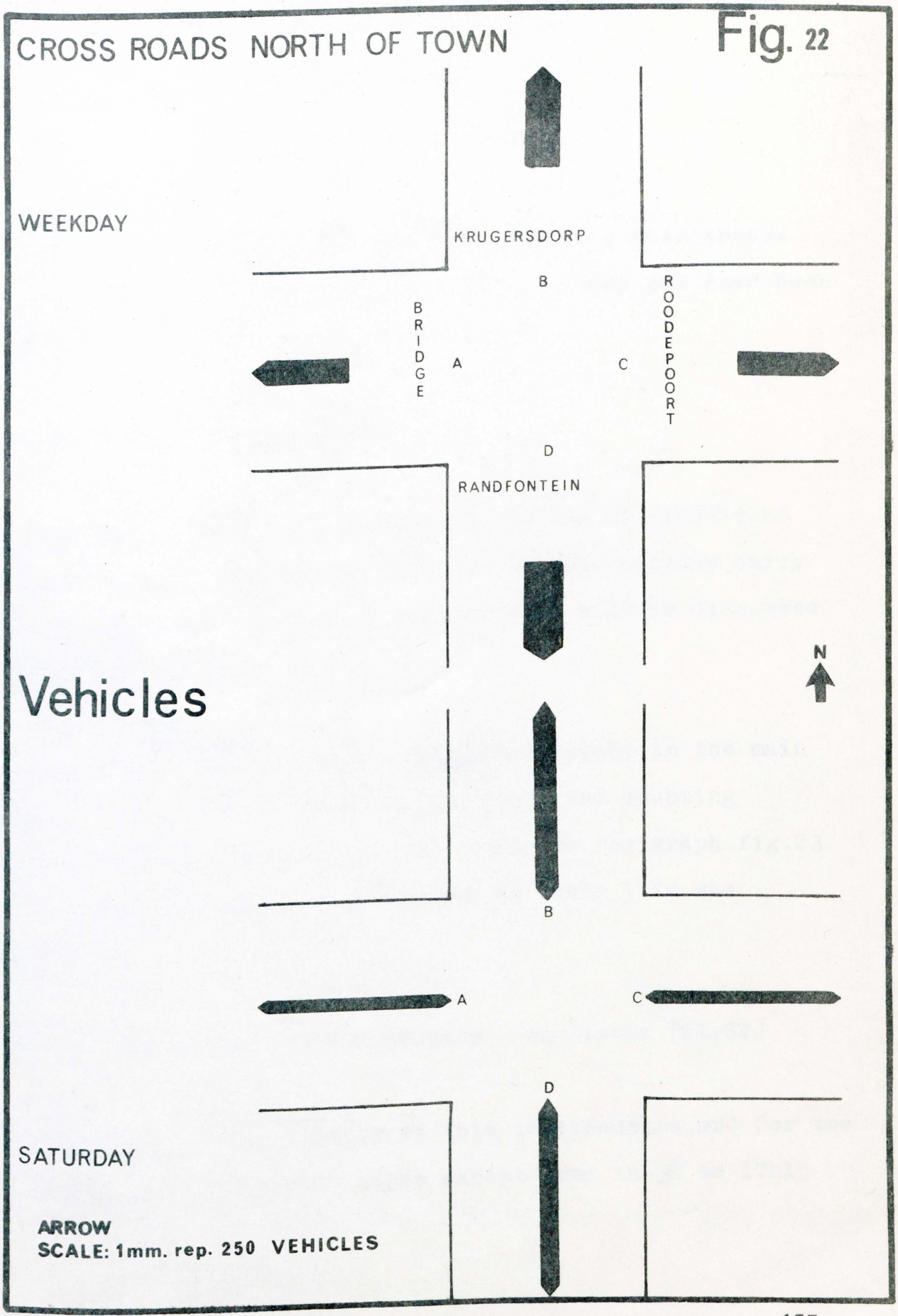
iv) Cross-Roads North of Town (M4)

The recording done at this intersection shows the outgoing traffic from the intersection. Most of the traffic over the bridge is to the residential areas of Greenhills and Homelake. The traffic crossing the bridge between 16h30 and 18h00 makes up 50% (405) of the total traffic for the road (808).


C/O LAZAR/UNION ST.
Fig.21
WEEKDAY
A
B
UNION
C
Vehicles
LAZAR
N
A
B
C
SATURDAY
ARROW SCALE: 1mm. rep. 250 VEHICLES

CROSS ROADS NORTH OF TOWN

Fig. 22



The other roads show similar patterns. The road to Randfontein carries 35% (1636) of the total for the inter= section (4720).

Saturday

The traffic patterns for all roads at the four main inter= sections on a Saturday are similar to a weekday and have been discussed above.

Spot Counts for Selected Roads

Spot counts are used to determine the volume of traffic at specific points. The roads selected for this purpose carry more than average traffic for reasons that will be discussed under each counting point.

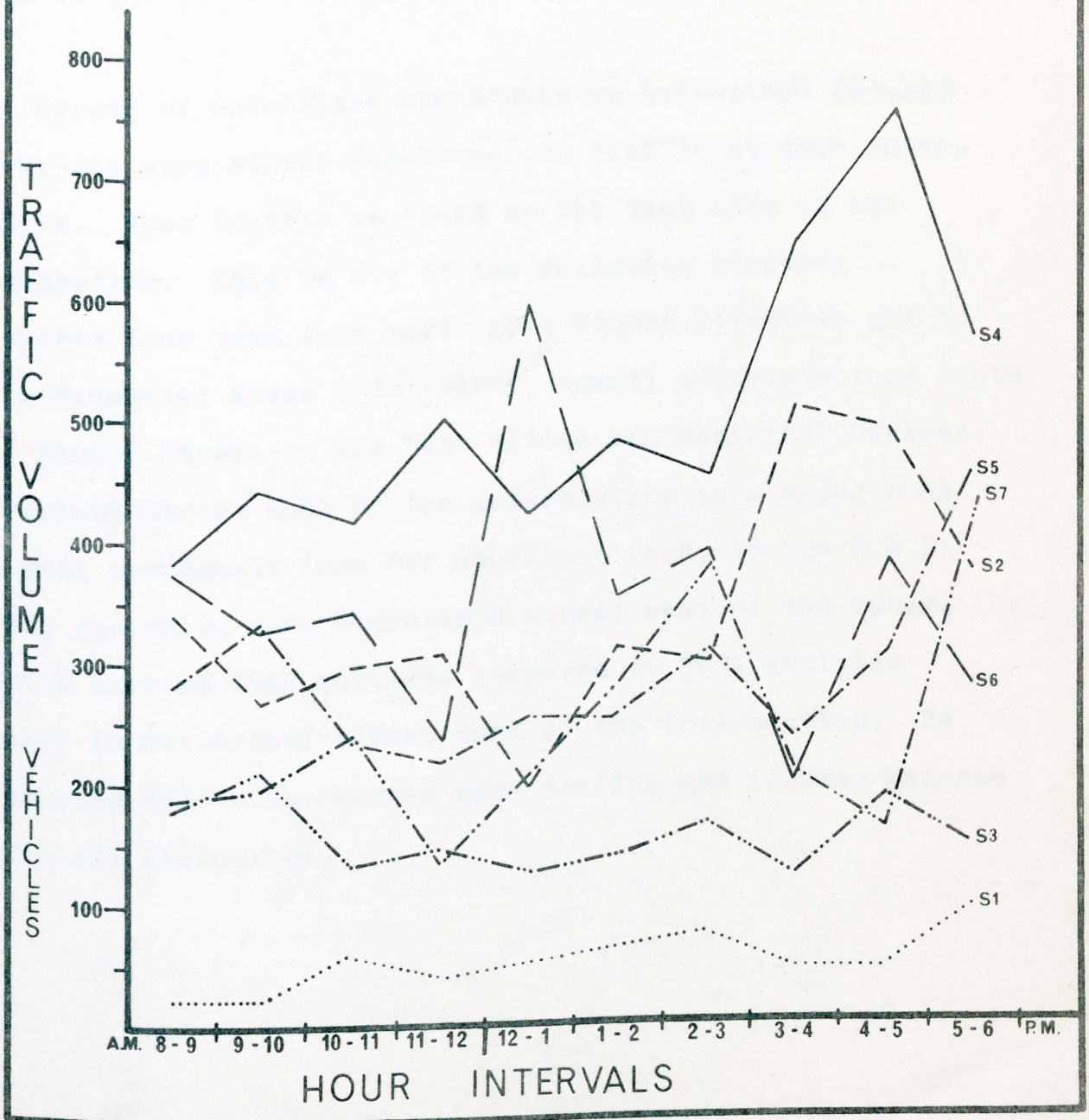
The counts show hourly traffic on certain roads in the main town area. For the position of the roads and counting positions refer to the map fig. 18 Refer to the graph fig.23 and for detailed analysis of figures to Table 3 in the Appendix.

i) Corner of Stubbs and 6th Streets - on Stubbs (S1,S2)

A robot regulates the traffic at this intersection and for the greater part of the day it copes except from 16h30 to 17h15

HOURLY MOVEMENT OF VEHICLES ON SELECTED ROADS

Fig. 23



when there is a heavy traffic flow from the south along Stubbs Street. The reason for this is that cars from the South side of town, (where all the municipal offices, railway station and industrial region are situated) use Stubbs Street to get to the residential areas of Homelake, Greenhills, Randgate and the smallholdings. Cars tend to pile up but a traffic officer is on duty at that time. Stubbs Street north of the intersection carries comparatively little traffic (521 vehicles during the recorded time) and Stubbs Street south of the intersection carries 3365 vehicles.

ii) Corner of Sutherland and Stubbs-on Sutherland (S3,S4)
A four-way stop street regulates the traffic at this inter= section. Most traffic is found on the east side of the intersection. This is due to the following reasons: motorists from town turn north into Stubbs Street to get to the residential areas along Sixth Street; motorists turn south into Stubbs Street to the Post Office and Municipal Offices; Sutherland Street east of the intersection is a major road and most convenient from the abovementioned, to the C.B.D. During recording time Sutherland Street west of the inter= section carried 1544 vehicles compared to 5034 vehicles counted in Sutherland Street east of the intersection. No particular direction carries more traffic and figures balance out in all directions.

iii) Corner of First and Fedler Streets - South of Intersection (S5)

This road enters town from the Industrial Areas, smallholdings, Finsbury and is also a by-pass for traffic through the old Bantu Township. The traffic along this road is constant, being mainly traffic to and from the Industrial Areas. In a North-South direction 1416 vehicles were recorded and in a South-North direction 1449 vehicles were recorded showing approximately the same volume of traffic in both directions.

iv) Corner of Duncan and Maugham Roads - On Maugham Road North of Intersection (S6)

Maugham Road skirts the east side of the C.B.D. and is used by many motorists and heavy vehicles as a by-pass through Randfontein. The traffic along the road is constant with slight increases in a North-South direction in the mornings and a South-North direction in the afternoons. In a North-South direction 1960 vehicles were recorded and in a South-North direction 1492 vehicles were recorded ~~recorded~~ giving a slight difference in volume for the two directions.

Maugham Road can be very important in alleviating the traffic pressure in the C.B.D. area along Main Reef Road. This can be achieved by encouraging road users to make use of Maugham Road as a by-pass if Randfontein C.B.D. is not their destination.

The only disadvantage is that an Old Age Home is situated along this road, making heavy traffic dangerous particularly because most of the inhabitants of the home walk to and from the shopping areas.

v) Cemetery Road Bridge across Railway (S7)

The residential areas of Greenhills and the northern part of Homelake can use this bridge to gain access to the town area. It is not used to a great extent because it lies on the northern outskirts of the town. Traffic is not heavy across this bridge. Motorists prefer using the 6th Street bridge. This is illustrated by the following figures which show vehicle counts over a period from 08h00 to 18h00:

STREET	E-W	W-E
6th Street Bridge	3906	4040
Cemetery Road Bridge	1174	1238

(Refer to Table 3 in Appendix)

Traffic ~~Cordon~~ Counts for Residential Areas

These ~~cordon~~ counts on roads leading to or coming from residential areas, show the half hourly traffic flow. Refer to Fig.18 for the location of counting positions. For more detailed analysis of figures refer to Appendix Table 4.

i) Greenhills (R1 - R4)

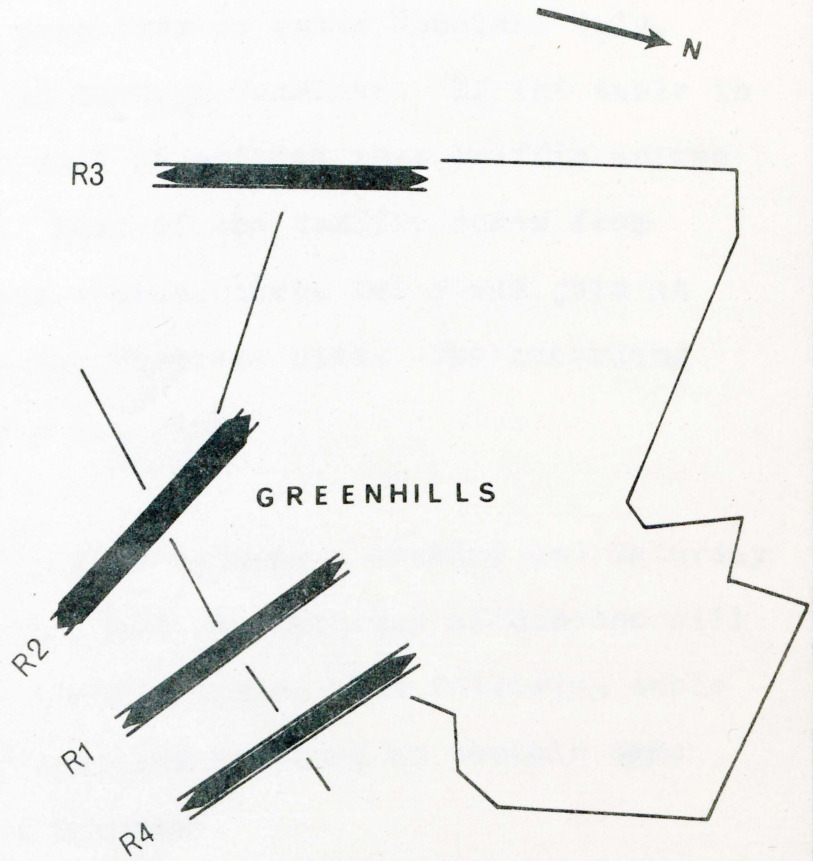
Most traffic leaving or entering Greenhills is found along Kenneth Avenue (R2) - (1813 vehicles in a 10 hour period in both directions) compared to Greenhills Avenue (R3) - (carrying 1039 vehicles in a 10 hour period). Greenhills Avenue carries the second highest volume of traffic. The reason for the above is that Kenneth Avenue serves a large area of Greenhills and this area (which is North of the road) is the older part of Greenhills. Greenhills Avenue serves the newer areas of Greenhills. This area is still being developed. The main shopping area of Greenhills is situated off Kenneth Avenue.

The other two roads (R1 & R4) carry approximately the same volume of traffic (R1 - 896, R4 - 764). Convent Road (R1) serves the northern part of Greenhills and has access to Homestead Avenue which is a double road and makes travelling faster into or from town. There is a small shopping centre on Convent Road which accounts for its slightly higher traffic volume than Northway (R4). Northway serves Greenhills from the north. This road is mainly used by people travelling to areas north of Randfontein i.e. towards the West Rand and Johannesburg. It is also the main road to the English High School and a lot of the traffic consists of school traffic.

The total number of vehicles which entered Greenhills during

CORDON COUNT for Greenhills

Fig. 24



ARROW SCALE: 1mm. rep. 250 VEHICLES

the time recorded was 2159 and the number of vehicles which left Greenhills was 2353.
(Refer to Flow-line diagram Fig.24)

ii) Homelake (R5)

The recording was done on the 6th Street bridge. The reason being that so many through-roads from other areas pass through Homelake. All the through-roads funnel into a single road across the bridge. The figures recorded do not give the number of vehicles which come from or enter Homelake only, but all vehicles which pass through Homelake. If the table in the Appendix is studied it will be noticed that traffic across the bridge is very heavy. Most of the traffic comes from Van Riebeeck Road and Freda Avenue, these two roads join at the foot of the bridge on the Homelake side. The recording was done on a weekday and a Saturday.

Date Date

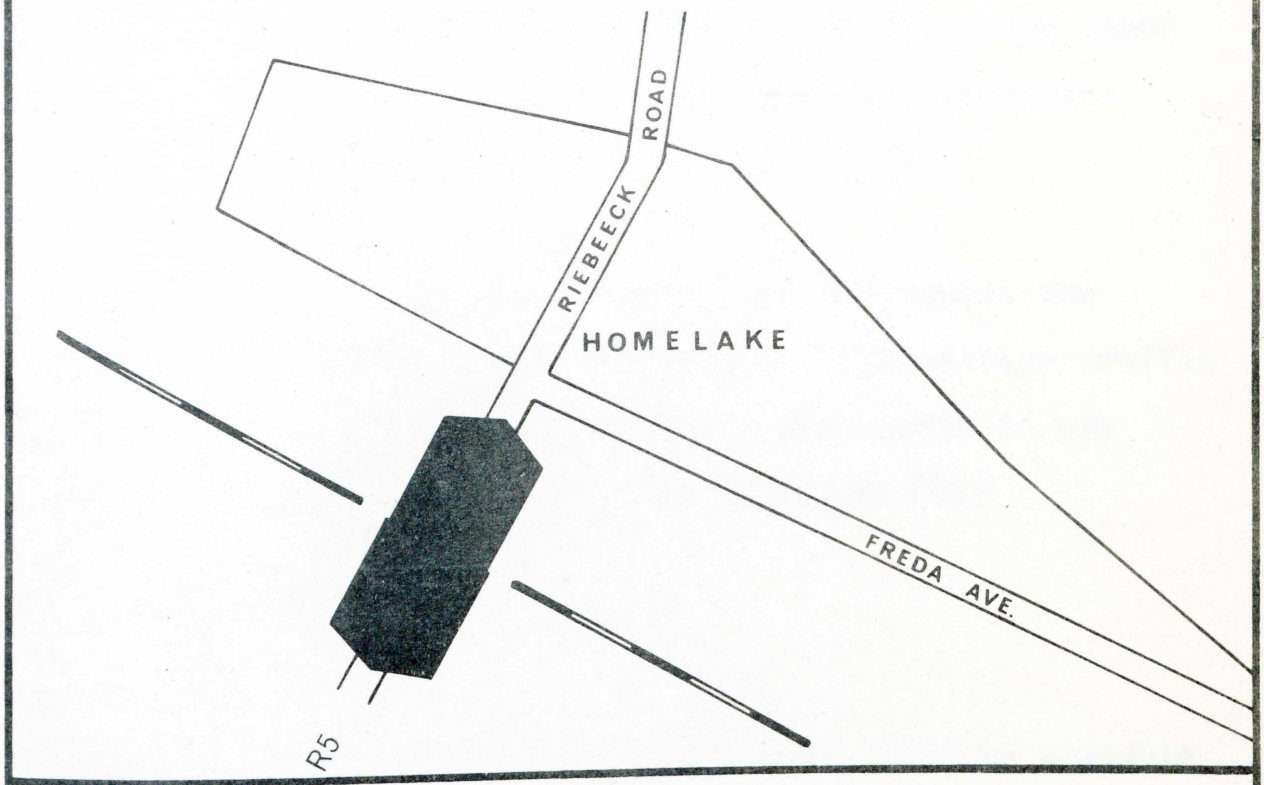
Traffic, if a comparison is made between a weekday and Saturday will be taken from 08h00 to 13h00, as Saturday afternoons will not be regarded as normal traffic times. The following table shows the total number of vehicles recorded at certain ~~time~~ periods on a weekday and a Saturday.

TIME	08h00 - 13h00		08h00 - 18h00	
DIRECTION	Going East	Going West	Going East	Going West
WEEKDAY	1523	1189	4040	3906
SATURDAY	3074	2440	4565	3992

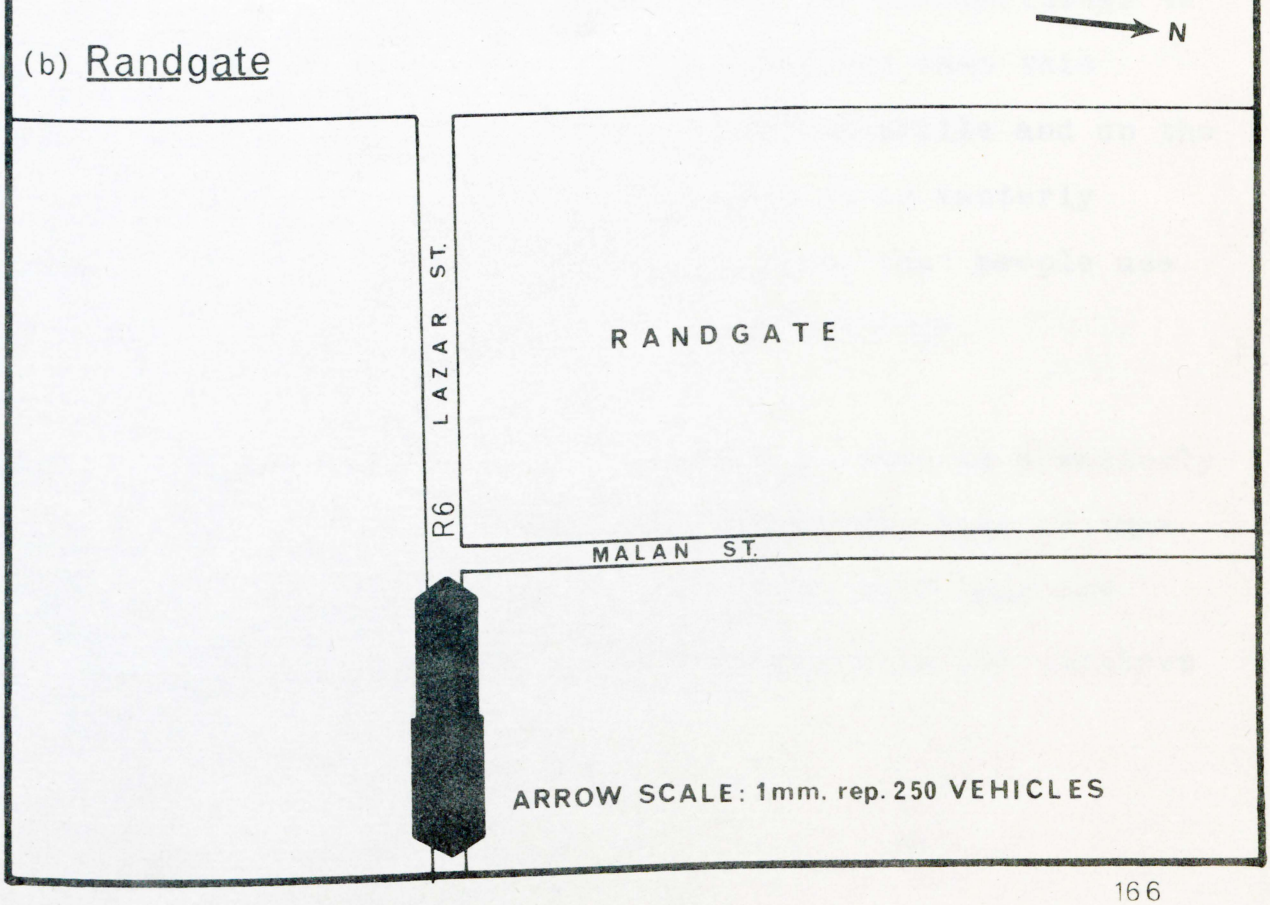
Screen line Count

CORDON COUNT for (a) Homelake

Fig. 25



(b) Randgate



Weekday traffic during 13h00 to 14h00 is very heavy - travelling east 535, travelling west 540. The main reason for this is that the Afrikaans High School is situated on Van Riebeeck Road 50 metres from the bridge. Traffic from 16h00 to 18h00 is also heavy especially in a westerly direction i.e. to the residential areas.

On Saturdays heavy traffic is experienced throughout the period 08h00 to 13h00 in both directions. The average traffic volume across the bridge is 13 vehicles per minute in any direction. (Refer to Flow-line diagram Figure 25a).

iii) Randgate (R6)

This count was taken on Tambotie Ext. Road. This is a double road and serves Randgate, Greenhills and the smallholdings to the west of Randfontein. It must be mentioned that this traffic also comprises traffic out to Carletonville and on the Ventersdorp roads. Most traffic is found in an easterly direction in the mornings. The reason being that people use this road to get to town and work in the mornings.

More vehicles move in an easterly direction than in a westerly direction (E - 2484, W - 1846). The reason for this is that residents in Greenhills approach town along this road and upon returning, use roads entering Greenhills in the northern part (R1, R2, R4).

To calculate the exact number of vehicles which come from Randgate alone would be impossible but the following method may be used. These are counts on all roads entering or leaving Randgate. If these roads' totals are added and then the grand total subtracted from the total of vehicles using Tambotie Ext. Road, the following can be derived.

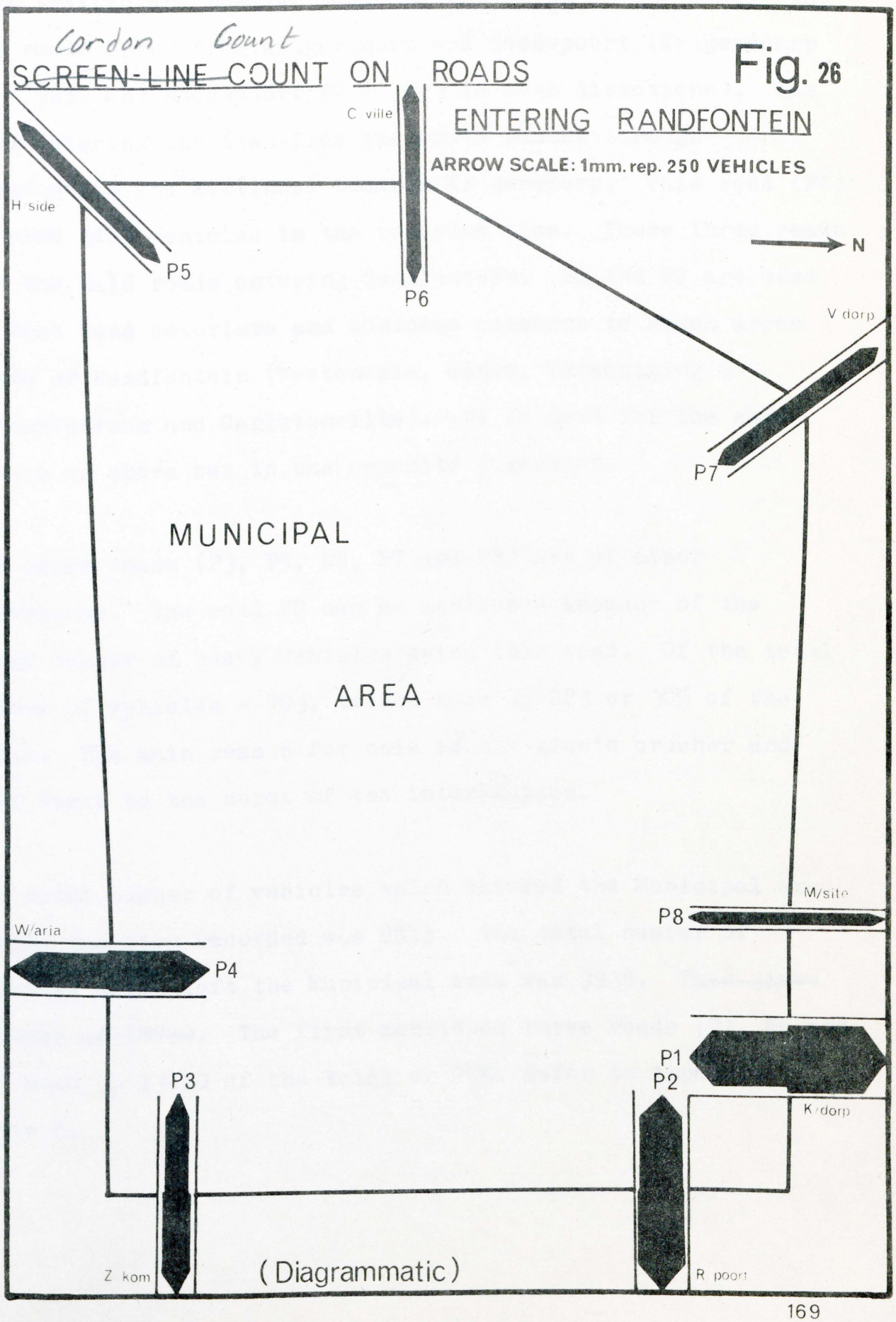
From Carletonville (P6)	736
From Ventersdorp (P7)	1195
From Greenhills (R3)	1039
Grand Total	2970

Tambotie Ext. Road (R6)	4330
Minus Grand Total for P6, P7 and R3	2970
	1360

The number of vehicles which entered and left Randgate between 08h00 and 17h30 was 1360 compared to 4512 vehicles for Greenhills. (Refer to Flow-line diagram Fig.25b)

Cordon
~~Screen-line~~ counts - Roads entering the Municipal Boundary

Cordon
The ~~screen-line~~ counts were taken on roads entering the Municipal boundary. The recording was done on a weekday at half-hourly intervals. Refer to Fig.18 for the location of counting positions and Fig.26 for a flow-line map.


Cordon Count
SCREEN-LINE COUNT ON ROADS
Fig. 26
ENTERING RANDFONTEIN
ARROW SCALE: 1mm. rep. 250 VEHICLES
C ville
H side
P5
P6
N
V dorp
P7
MUNICIPAL
AREA
M/site
P8
W/aria
P4
P1
P2
P3
K/dorp
Z kom
(Diagrammatic)
R poort

The roads entering the Municipal boundary which carry the most traffic are the two roads to the North of the town. The two roads enter from Krugersdorp and Roodepoort (Krugersdorp P1 - 5650 and Roodepoort P2 - 3873 in both directions). The road entering the town from the south passes through Randfontein and continues towards Krugersdorp. This road (P4) carried 3487 vehicles in the recorded time. These three roads are the main roads entering Randfontein. P1 and P2 are used by West Rand motorists and business concerns to reach areas south of Randfontein (Westonaria, mines, Vereeniging , Potchefstroom and Carletonville). P4 is used for the same reason as above but in the opposite direction.

The other roads (P3, P5, P6, P7 and P8) are of minor importance. The road P8 can be mentioned because of the large number of heavy vehicles using this road. Of the total number of vehicles - 703, trucks make up 223 or 30% of the total. The main reason for this is the mine's crusher and sand works to the north of the intersection.

The total number of vehicles which entered the Municipal area during the time recorded was 8815. The total number of vehicles which left the Municipal area was 9935. ~~This gives a total of 18750~~. The first mentioned three roads (P1, P2 and P4) make up 13010 of the total or 70%. Refer to Appendix Table 5.

6.4.4 PARKING

6.4.4.1 PARKING IN THE C.B.D.

TABLE SHOWING PARKING IN THE C.B.D.(Refer to following page)
(See map Fig.27 showing parking in C.B.D.)

Observations in relation to the table.

The table shows C.B.D. parking during a weekday (Tuesday 14th November, 1972 at 15h00); a mid-month Saturday (18th November, 1972 at 11h00) and an end-of-the-month Saturday (2nd December, 1972 at 10h30). A count of the parked vehicles was taken at the mentioned times to determine the parking density in the C.B.D.

It will be noticed from the table showing parking in the C.B.D. that parking during a weekday is average (447 parked vehicles to a total of 960 parking spaces or 46,6% of the parking capacity). The largest of these areas are G3 and F2; they are both on the west side of Main Reef Road. The block side G3 is in the centre of the shopping area and is the nearest parking side after turning north into Main Reef Road from 6th Street. The side F2 is in front of one of the large bazaars and is therefore used by shoppers. The remaining block sides G2 (7 spaces), I4 (5 spaces) and J1 (5 spaces) are short and therefore soon occupied.

TABLE 24

BLOCK	SIDE	PARK-ING CAPA-CITY	TUESDAY 14.11.72. 15h00	%	SATURDAY 18.11.72. 11h00	%	SATURDAY 2.12.72. 10h30	%
A	1	15	5	33	1	6	1	6
B	1	5	3	60	1	20	1	20
C	1	34	18	53	29	85	25	74
D	1	24	15	62	22	92	22	92
E	1	24	9	37	13	54	18	75
F	1	22	7	29	16	73	18	82
	2	20	23	100	19	95	24	100
	3	3	2	66	3	100	3	100
G	1	20	8	40	20	100	20	100
	2	7	7	100	7	100	7	100
	3	21	21	100	19	90	22	100
H	1	12	6	50	11	92	11	92
	2	8	7	88	5	63	7	88
	3	18	13	72	18	100	17	95
	4	5	3	60	5	100	5	100
I	1	16	10	62	12	75	10	62
	2	7	5	72	7	100	7	100
	3	17	13	71	17	100	17	100
	4	5	5	100	5	100	4	80
J	1	5	5	100	5	100	5	100
	2	12	3	25	6	50	9	75
	3	8	2	25	2	25	7	88
K	1	15	2	13	3	20	2	13
	2	8	1	12	-	-	4	50
	3	24	14	58	13	54	10	42
	4	8	-	-	-	-	1	12
L	1	8	-	-	-	-	-	-
	2	3	-	-	3	100	-	-
M	1	59	7	12	8	12	10	17
	2	7	4	57	5	71	7	100
N	1	34	26	78	33	97	34	100
	2	9	5	55	7	78	9	100
	3	5	3	60	3	60	5	100
O	1	6	3	50	4	67	6	100
P	1	40	33	83	45	100	42	100
	2	3	-	-	3	100	-	-
	3	10	2	20	7	70	5	50
	4	12	7	58	10	83	12	100
Marked	R1	129	46	36	87	67	124	96
Lots	R2	84	5	6	95	100	96	100
Open	S1	55	25	45	43	78	55	100
Lots	S2	25	11	44	25	100	24	96
	S3	60	33	55	56	93	60	100
	S4	18	16	89	18	100	17	94
	S5	30	14	47	30	100	25	83
Totals		960	447	46,56	741	77,18	808	84,16

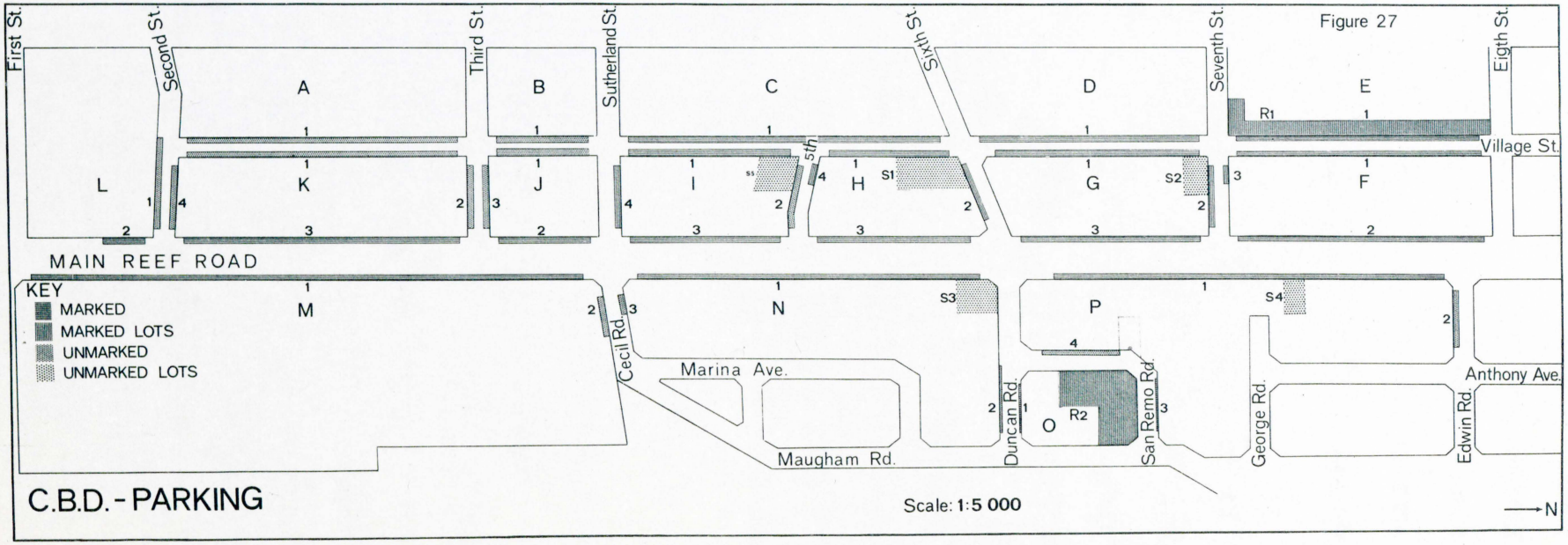


Figure 27
First St.
Second St.
Third St.
Sutherland St.
Sixth St.
Seventh St.
Eigth St.
5th
A
B
C
D
E
L
K
J
I
H
G
F
R1
S1
S2
S3
S4
R2
O
P
N
M
Village St.
MAIN REEF ROAD
KEY
MARKED
MARKED LOTS
UNMARKED
UNMARKED LOTS
Cecil Rd.
Marina Ave.
Maugham Rd.
Duncan Rd.
San Remo Rd.
George Rd.
Edwin Rd.
Anthony Ave.
C.B.D. - PARKING
Scale: 1:5 000
N

During the week, parking along the Main Reef Road is heavy. The reason being that people prefer to park as near as possible to the shops. It is not necessary for motorists to park in Village Street or at the other parking lots. There are a large number of parking spaces in the parking lots and other block sides slightly away from the main shopping area.

On Saturday the 18th November, 1972, 19 of the 38 block sides had capacities ranging from 80% to 100% and on Saturday the 2nd December, 1972, 23 of the 38 block sides had capacities ranging from 80% to 100%. Because of the above capacities, motorists are forced to make use of the parking lots which are slightly removed from the shopping area. There are 7 parking lots; on Saturday the 18th November, 1972, 5 of the parking lots had capacities ranging from 80% to 100% and on Saturday the 2nd December, 1972, all the parking lots had capacities ranging from 80% to 100%.

The highest concentration of parking is found on both sides of Main Reef Road between the two points - Sutherland/Cecil Streets and 8th/Edwin Streets. There is a total of 6 block sides found between the two points which is also the main shopping area. On Saturday the 18th November, 1972, 3 of the sides in this area had 100% capacities while the other 3 ranged from 90% to 97%. On Saturday 2nd December, 1972, 5 of the sides had 100% capacities while the other side H3 had a capacity of 95%.

The total percentage capacity for Saturday 2nd December, 1972 (84,16%) is very high. During that particular day further counts were made at different times. Parking capacities were higher than the capacities shown on the table at 10h30.

Double parking on Saturdays is very high especially in Main Reef Road.For example: it was recorded on Saturday 2nd December, 1972, that 8 vehicles double parked at Block P side 1 at 10h30.

The following block sides showed a low percentage throughout the recorded times for the 3 days: A1, B1, J3, K1, K2, L1, L2 and M1. The reason for the low percentages is that all the areas except M1 are slightly removed from the C.B.D. Side M1 is in front of a school and not important to shoppers.

In conclusion it can be stated that there is adequate parking in the main shopping area of Randfontein if the parking lots are utilized to capacity.

6.4.4.2 PARKING AT SHOPPING CENTRES IN THE RESIDENTIAL AREAS

Greenhills

TABLE SHOWING PARKING AT DIFFERENT CENTRES IN GREENHILLS. (Refer following page). Refer to figures 28 and 29 for the parking areas.

TABLE 25

STREET	NUMBER	PARKING CAPACITY	TUESDAY 15h00 22.5.73.	%	SATURDAY 11h00 26.5.73.	%	TYPE OF PARKING
Convent	1	20	6	30	9	45	Marked
	2	6	1	17	2	33	Inset
Circle	3	6	3	50	5	83	Inset
	4	5	4	80	4	80	Inset
	5	12	6	50	11	92	Inset
	6	8	2	25	6	75	Inset
	7	10	-	-	1	10	Open
Kenneth	8	6	3	50	3	50	Inset
Kameel	9	7	1	14	2	28	Inset
Total		78	26	33	43	55	

Observation:

From the table it can be noticed that parking is not very heavy. The highest percentage of parking is found at the circle centre. At other times it was noted that parking, especially at the circle centre, was at capacity and at such times the open lot (9) was used.

Parking in all instances can be made more efficient if the parking lots are marked for individual car parking. At present, motorists tend to park haphazardly, wasting space. The shopping centres supply mainly perishable goods. For this reason people do not park for long periods.

Fig. 28

GREENHILLS – PARKING

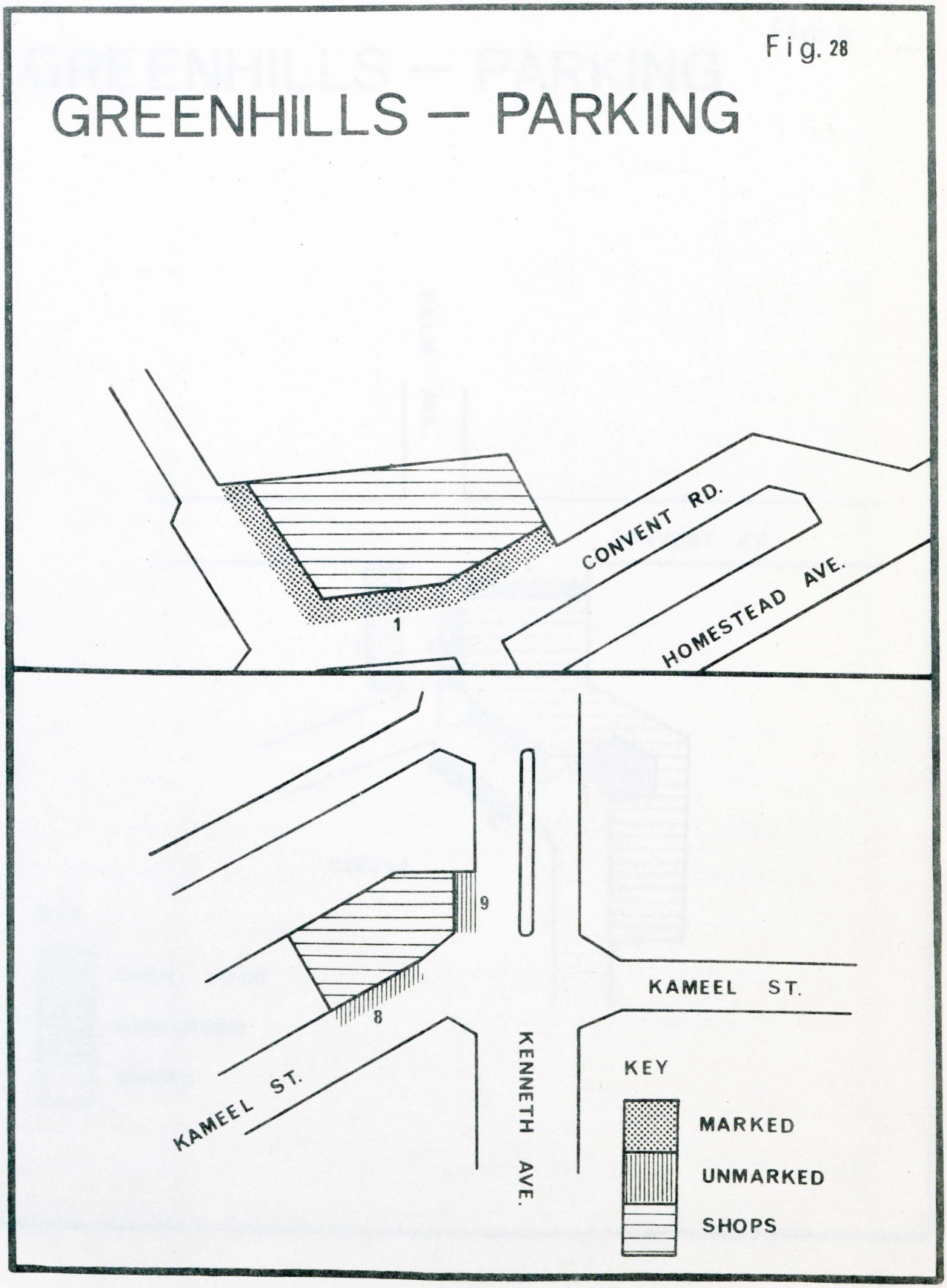


Fig. 29

GREENHILLS — PARKING

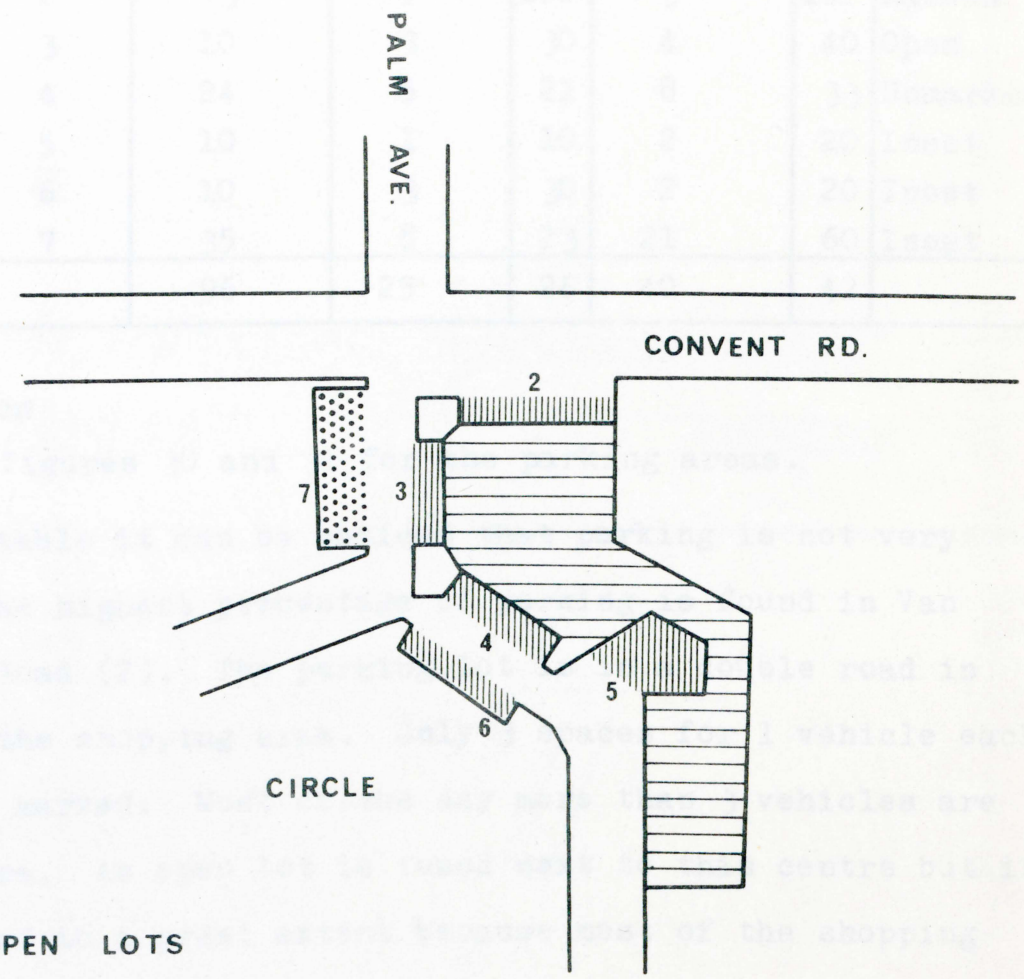


TABLE 26

TABLE SHOWING PARKING AT DIFFERENT CENTRES IN HOMELAKE

STREET	NUMBER	PARKING CAPACITY	TUESDAY 15h00 22.5.73	%	SATURDAY 11h00 26.5.73	%	TYPE OF PARKING
Van Riebeeck	1	4	-	-	-	-	Marked
	2	3	5	100	3	100	Marked
Freda	3	10	3	30	4	40	Open
	4	24	5	21	8	33	Unmarked
	5	10	1	10	2	20	Inset
	6	10	3	30	2	20	Inset
Tambotie	7	35	8	23	21	60	Inset
Total		96	25	26	40	42	

Observation

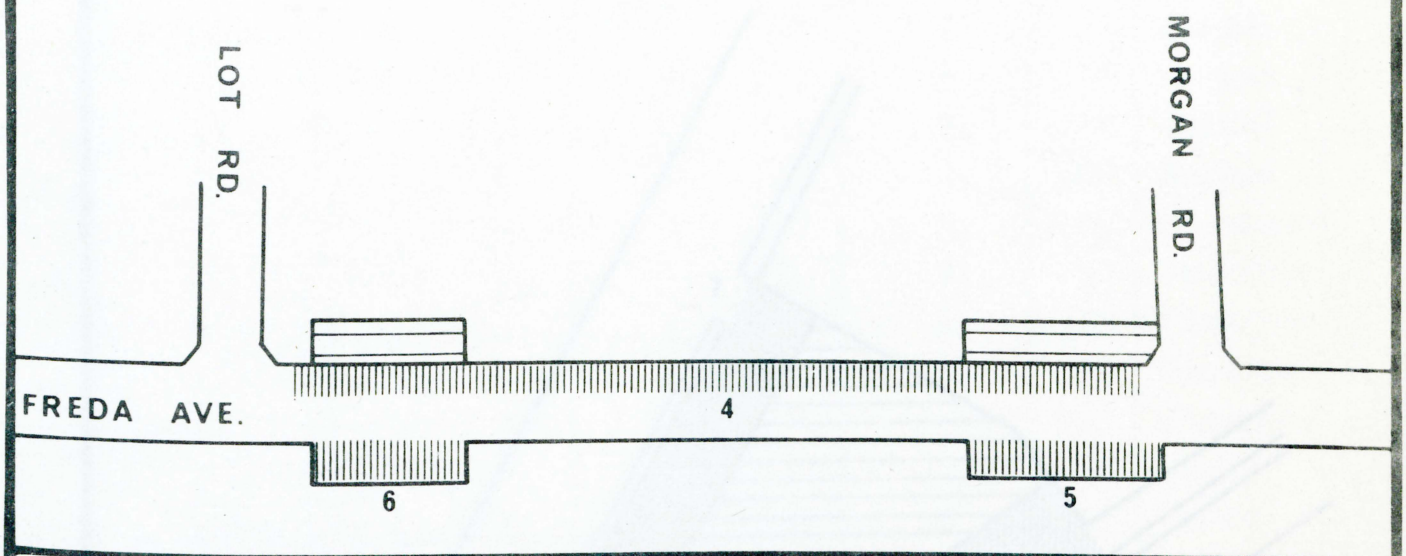
Refer to figures 30 and 31 for the parking areas.

From the table it can be noticed that parking is not very heavy. The highest percentage of parking is found in Van Riebeeck Road (2). The parking lot is in a double road in front of the shopping area. Only 3 spaces for 1 vehicle each have been marked. Most of the day more than 3 vehicles are parked here. An open lot is found next to this centre but it is not used to a great extent because most of the shopping takes a few minutes only since the centre consists of a cafe, butcher and greengrocer.

Parking areas 5,6 and 7 are unmarked. If they were marked, parking would be more efficient.

Fig. 30

HOMELAKE — PARKING



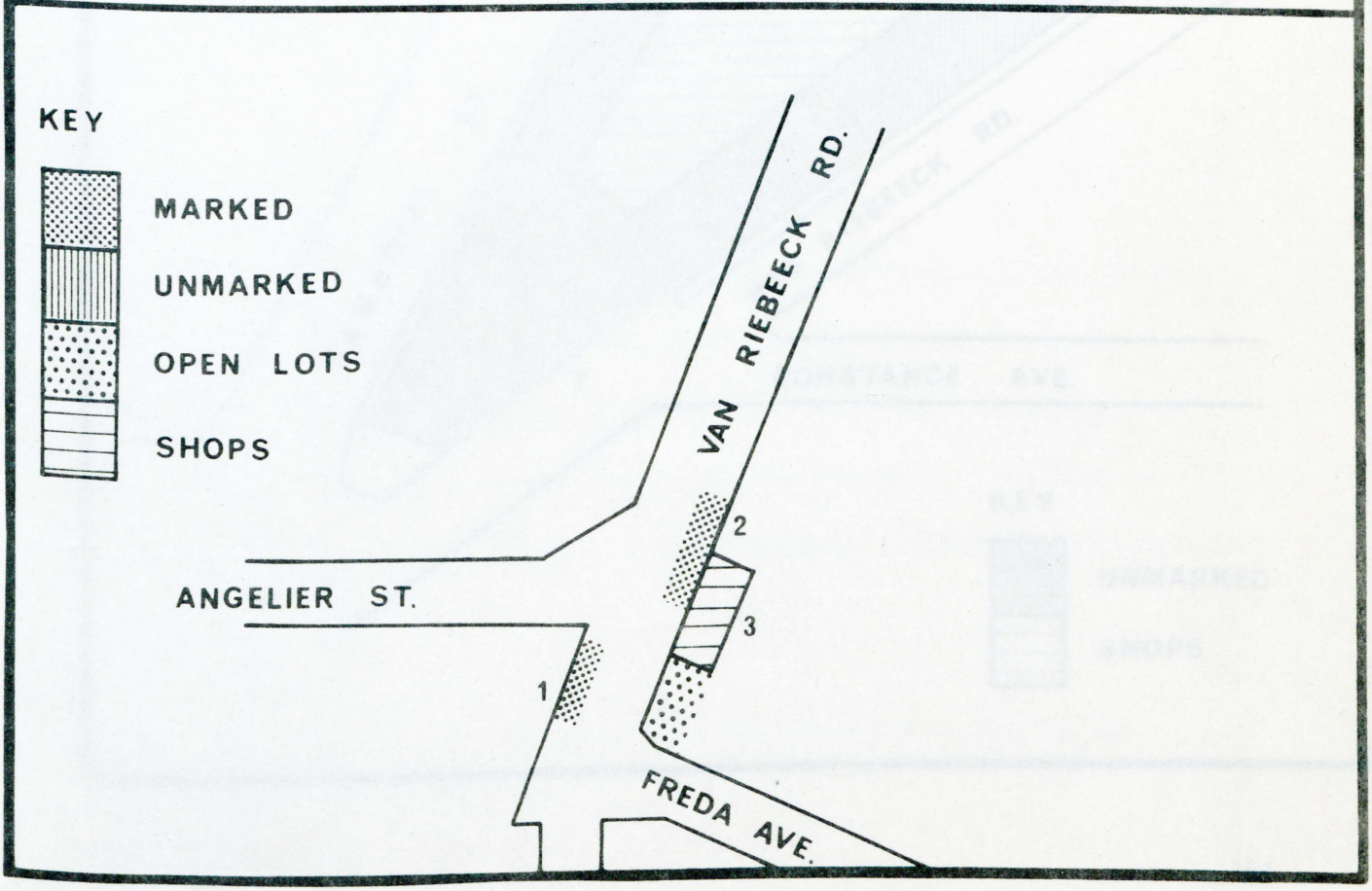


Fig. 31

HOMELAKE — PARKING

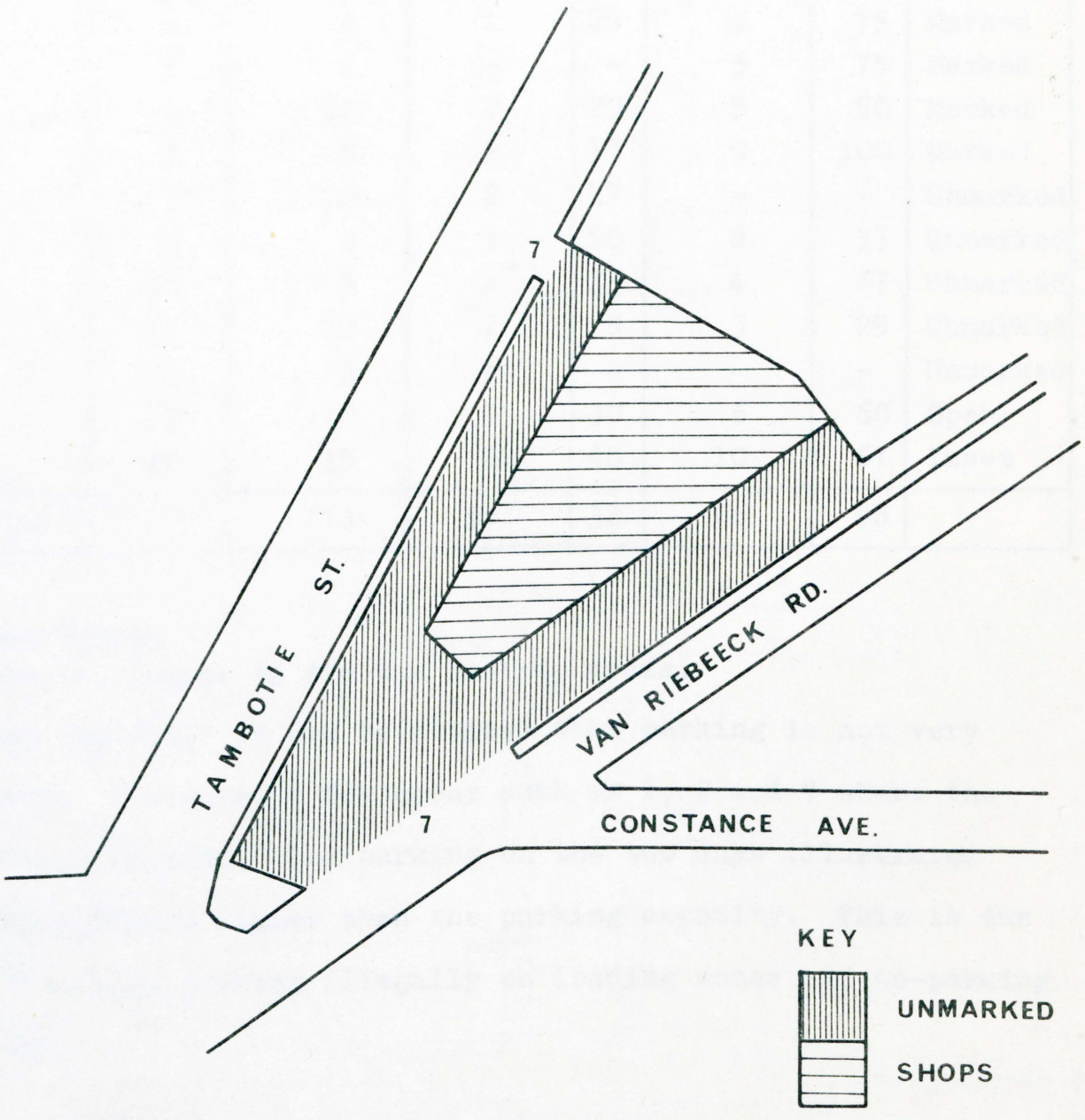


TABLE 27

TABLE SHOWING PARKING AT RANDGATE SHOPPING CENTRE

STREET	NUMBER	PARKING CAPACITY	TUESDAY 15h00 22.5.73	%	SATURDAY 11h00 26.5.73	%	TYPE OF PARKING
Union	1	4	2	50	4	100	Marked
	2	7	5	71	10	100	Marked
	3	9	5	55	7	78	Marked
	4	4	1	25	3	75	Marked
	5	4	-	-	3	75	Marked
	6	10	2	20	5	50	Marked
	7	8	3	37	9	100	Marked
	8	12	2	17	-	-	Unmarked
	9	6	3	50	2	33	Unmarked
	10	6	2	33	4	67	Unmarked
	11	12	1	8	3	25	Unmarked
	12	6	-	-	-	-	Unmarked
	13	10	3	30	6	60	Open
	14	15	6	40	10	67	Inset
Total		113	35	32	66	58	

Observation

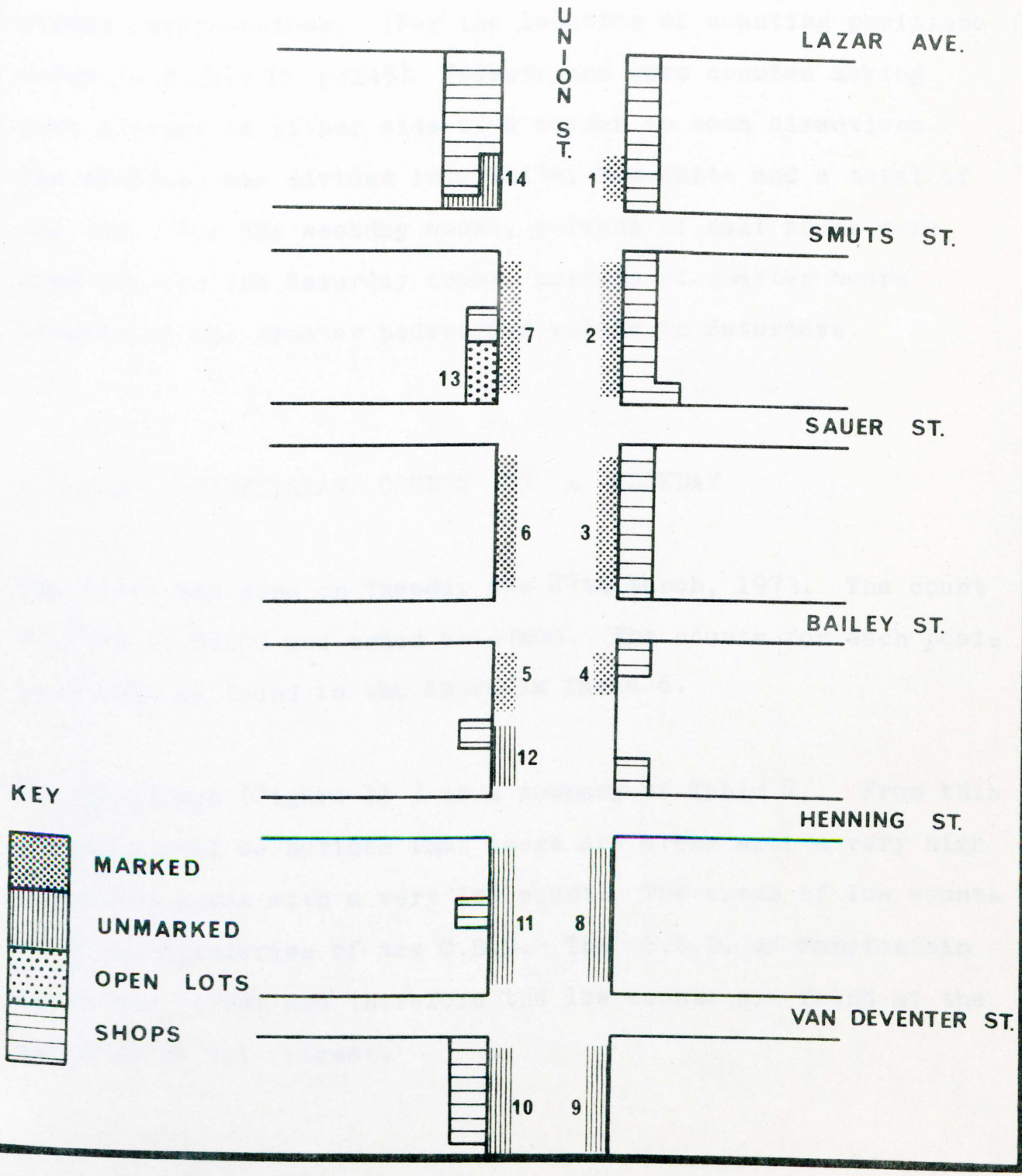
Refer to figure 32 for the parking areas.

From the table it can be noticed that parking is not very heavy. There are a few areas such as 1, 2 and 7 where the parking is 100%. The parking on the two days illustrated show a figure higher than the parking capacity. This is due to vehicles parking illegally on loading zones and no-parking areas.

The marking of the parking areas has caused parking in Randgate to be uncomplicated.

Fig. 32

RANDGATE — PARKING



6.4.5 PEDESTRIAN COUNTS

The pedestrian counts for Randfontein were done in the C.B.D. because this is the only area where pedestrian movement on a large scale is of any significance. With the exception of two counting positions all the counting positions were situated at street intersections. (For the location of counting positions refer to Figure 15 pg145). Pedestrians were counted moving past a point on either side of a corner in both directions. The counting was divided into White, Non-White and a total of the two. For the weekday count, periods of half hours were used and for the Saturday count, periods of quarter hours because of the greater pedestrian volume on Saturdays.

6.4.5.1 PEDESTRIAN COUNTS ON A WEEKDAY

The count was done on Tuesday the 27th March, 1973. The count started at 08h00 and ended at 17h00. The counts for each position will be found in the Appendix Table 6.

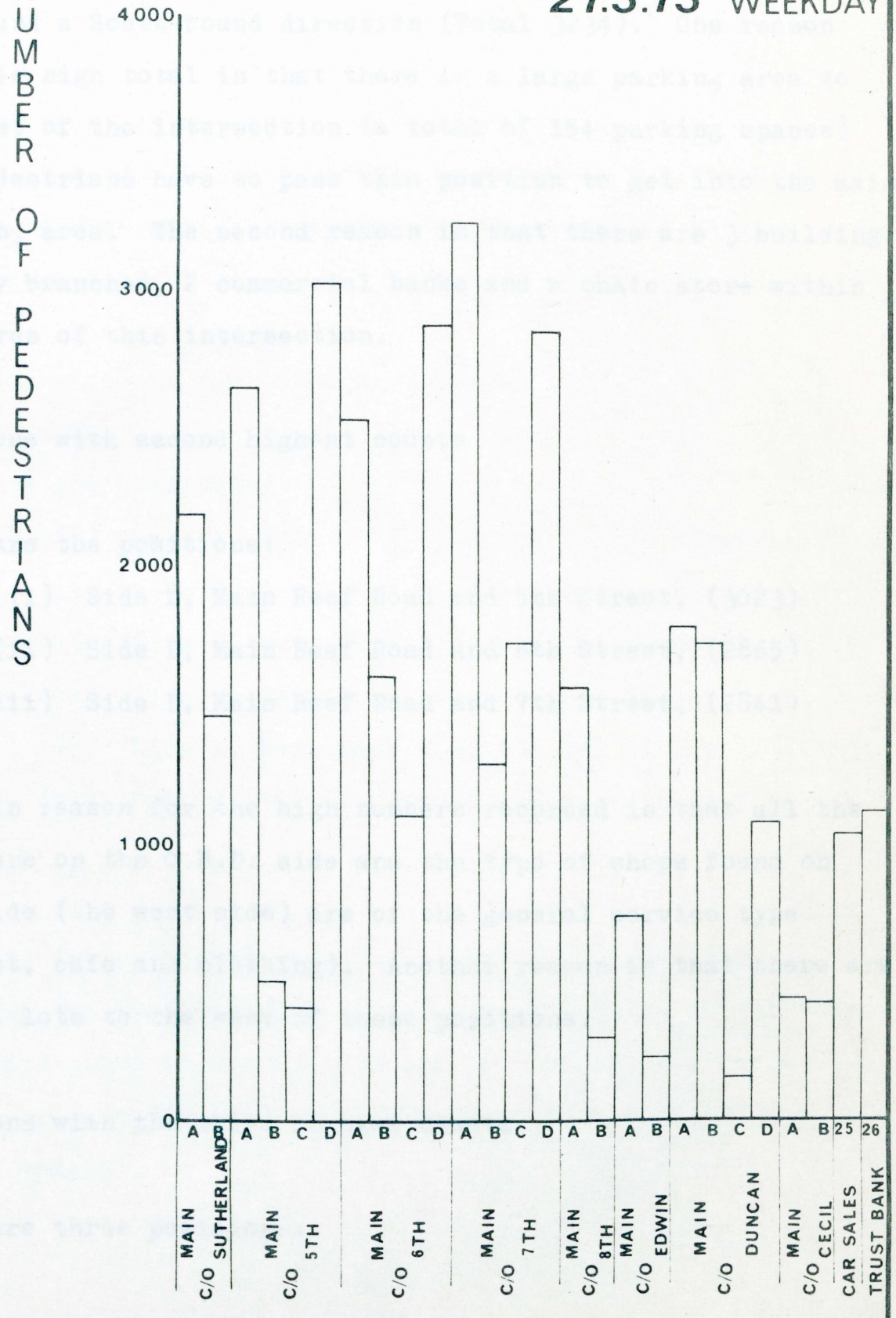
The Bar Graph (Figure 33) is a summary of Table 6 . From this graph it will be noticed that there are areas with a very high count and areas with a very low count. The areas of low counts mark the boundaries of the C.B.D. The C.B.D. of Randfontein is in one street and therefore the low counts are found at the two ends of this street.

BAR GRAPH

Fig. 33

PEDESTRIAN TRAFFIC IN THE C.B.D.

27.3.73 WEEKDAY



COUNTING LOCATIONS AND SIDES

Position with the highest count

This is Side A of Main Reef Road and 7th Street in a North-bound and a South-bound direction (Total 3234). One reason for this high total is that there is a large parking area to the west of the intersection (a total of 154 parking spaces) and pedestrians have to pass this position to get into the main shopping area. The second reason is that there are 3 building society branches, 2 commercial banks and a chain store within 50 metres of this intersection.

Positions with second highest counts

These are the positions:

(i) Side D, Main Reef Road and 5th Street, (3023)

(ii) Side D, Main Reef Road and 6th Street, (2865)

(iii) Side D, Main Reef Road and 7th Street, (2841)

The main reason for the high numbers recorded is that all the sides are on the C.B.D. side and the type of shops found on this side (the west side) are of the general service type (chemist, cafe and clothing). Another reason is that there are parking lots to the west of these positions.

Positions with the third highest counts

There are three positions:

(i) Side A, Main Reef Road and 5th Street (2649)

(ii) Side A, Main Reef Road and 6th Street (2521)

(iii) Side A, Main Reef Road and Sutherland Street (2187)

These three sides are on the same street side as the previous section (i.e. on the West side). The reasons for the high numbers counted will be the same as those applied to the previous section.

Positions with the fourth highest counts

These are the positions:

(i) Side A, Main Reef Road and Duncan Street (1773)

(ii) Side B, Main Reef Road and Duncan Street (1723)

(iii) Side C, Main Reef Road and 7th Street (1719)

(iv) Side B, Main Reef Road and 6th Street (1604)

(v) Side A, Main Reef Road and 8th Street (1559)

(vi) Side B, Main Reef Road and Sutherland Street (1460)

The first two positions have the highest count because, a) these two positions are on the corner leading to the other main chain store in Randfontein and (b) there is a large parking area to the east of the intersection (total of 144 parking spaces).

The other positions counted are all the result of parking areas to the west of the intersection except Side B of Main Reef Road and Sutherland Street. The railway station and Non-White bus terminal are situated to the west of this intersection and most of the pedestrians are Non-Whites (Non-Whites 1072, Whites 388).

Positions with the fifth highest counts

These are the positions:

(i) Side B, Main Reef Road and 7th Street (1289)

(ii) Number 26, Trust Bank (1177)

(iii) Side C, Main Reef Road and 6th Street (1095)

(iv) Side D, Main Reef Road and Duncan Street (1074)

(v) Number 25, Car Sales (1043)

There are parking areas to the West of Sides i), iii) and east of iv) giving comparatively high counts. The other sides of these intersections have similarly high counts.

Position number 25 and 26 are at pedestrian crossings at T - junction intersections (opposite the street crossing into Main Reef Road). The flow of pedestrian traffic is along the east side of the C.B.D. in a North-bound and South-bound direction and is not therefore abnormally high.

Position with the sixth highest count

This is Side A, Main Reef Road and Edwin Street (740)

This position has a comparatively low count because it marks the North end of the shopping area on the east side of the C.B.D. It is higher than the positions to follow because pedestrians crossing from the west side to the east side or vice-versa were counted because a popular hardware store is found on the west side.

Positions with the second lowest counts

These are the positions:

(i) Side B, Main Reef Road and 5th Street (499)

(ii) Side A, Main Reef Road and Cecil Street (437)

(iii) Side B, Main Reef Road and Cecil Street (421)

(iv) Side C, Main Reef Road and 5th Street (410)

Sides i) and iv) lead to a one-way back-street which has no business function in the immediate area and the only parking is along the sides of the back-street (Village Street) with no parking lots. Sides ii) and iii) mark the end of the shopping area to the south of the C.B.D. on the east side.

Positions with the lowest counts

These are the positions:

(i) Side B, Main Reef Road and 8th Street (296)

(ii) Side B, Main Reef Road and Edwin Street (229)

(iii) Side C, Main Reef Road and Duncan Street(149)

Sides i) and iii) have low counts because they mark the last two sides of the end of the shopping area to the north of the C.B.D.

Side iii) is in the centre of the C.B.D. on the east side. The reason for its having the lowest count of all the positions is that it is situated at an open stand. This open stand is a corner stand used for parking. People tend to take a short route across this stand when coming from an easterly direction and turning into a northerly direction or vice-versa.

Summary

The flow of pedestrian traffic in the C.B.D. on a weekday shows a regular pattern in that the highest densities are found in the C.B.D. near chain stores, building societies, banks and general service shops. The lowest densities are found at the extremities of the C.B.D. where there are fewer or less important C.B.D. functions. Positions near parking lots also show a high density because of the pedestrian traffic to and from the parking lots.

6.4.5.2 PEDESTRIAN COUNTS ON A SATURDAY

The count was done on Saturday the 16th June, 1973. The count started at 08h00 and ended at 13h00. The counts for each position will be found in the Appendix Table 7.

The Bar Graph (Fig. 34) is a summary of Table 7. This graph's pattern is similar to the previous graph because of the reasons explained earlier (page192).

Positions with the highest counts

These are the positions:

(i) Side A, Main Reef Road and 5th Street (5289)

(ii) Side A, Main Reef Road and 6th Street (4123)

The counts on a Saturday are higher because Saturday is the main shopping day for the majority of people.

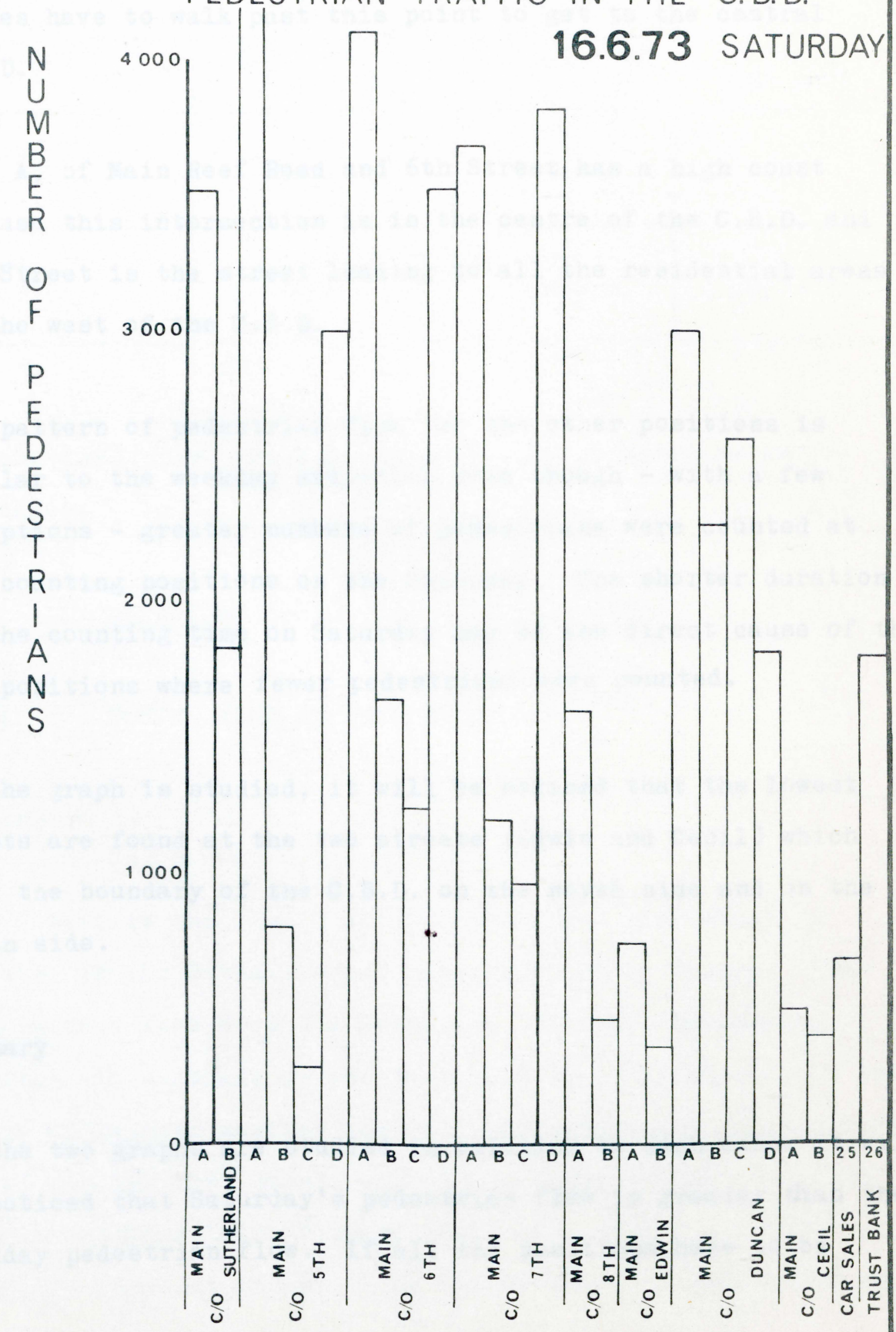
There is a shift in the highest density areas from a weekday to a Saturday. The highest densities for a Saturday are found at the intersections of Main Reef Road with 5th Street and 6th Street. Side A of Main Reef Road and 5th Street has the highest count (5289). The only plausible reason for this high count is that the Non-White count is very high (3729)compared to the White count (1560). The reason for this in turn is that there are a few shops in this area that cater specifically

BAR GRAPH

Fig. 34

PEDESTRIAN TRAFFIC IN THE C.B.D.

16.6.73 SATURDAY



COUNTING LOCATIONS AND SIDES

for Bantu shoppers. Another reason is that the bus terminus and railway station is to the west of the C.B.D. The Non-Whites have to walk past this point to get to the central C.B.D.

Side A, of Main Reef Road and 6th Street has a high count because this intersection is in the centre of the C.B.D. and 6th Street is the street leading to all the residential areas to the west of the C.B.D.

The pattern of pedestrian flow for the other positions is similar to the weekday situation even though - with a few exceptions - greater numbers of pedestrians were counted at the counting positions on the Saturday. The shorter duration of the counting time on Saturday may be the direct cause of the few positions where fewer pedestrians were counted.

If the graph is studied, it will be noticed that the lowest counts are found at the two streets (Edwin and Cecil) which mark the boundary of the C.B.D. on the north side and on the south side.

Summary

If the two graphs are studied in relation to each other it will be noticed that Saturday's pedestrian flow is greater than the weekday pedestrian flow. If all the positions have to be

added together for the whole recorded time for each day, the following figures result.

DAY	TOTAL OF ALL POSITIONS	TOTAL TIME	AVERAGE PER HOUR
Tuesday 27.3.1973.	37957	9 hours	4217
Saturday 6.6.1973	51021	5 hours	10204

On Saturdays there are 2,4 times as many pedestrians as on a weekday.

6.5 TRANSPORT

6.5.1 SOUTH AFRICAN RAILWAYS

Passengers

Randfontein is the last station on the West Rand which is included in the Witwatersrand Suburban Railway System. The main railway line from the East Rand through Johannesburg, includes all stations on the West Rand up to Randfontein. The railway passenger service between Randfontein and Johannesburg is regular and many people use the suburban trains. A large number of trains leave between 06h00 and 07h30 ; and 16h00 and 19h00 at intervals of approximately a quarter of an

hour. Between the early morning and late afternoon periods, a train leaves Randfontein approximately every 40 minutes. Many people use the trains to get to work on the West Rand or Johannesburg.

There are three stations in the Municipal area - Randfontein, Homelake and Robinson. People use the station nearest to their residential area. It takes approximately 1 hour and 10 minutes from Randfontein to Johannesburg by passenger train. Since the closing of the Bank - Oberholzer area because of sink-holes, passenger train traffic has ceased to the Western Transvaal (Potchefstroom and Klerksdorp).

Goods

Goods trains pass through Randfontein from the Witwatersrand to Welverdiend, the Western Transvaal and beyond.

Shunting to the Industrial Areas side-lines takes place twice daily: in the mornings and afternoons.

Randfontein

a) Passengers

The following table shows the number of passenger tickets sold at Randfontein Staion (1, 11 and 111 Class) during May 1972 - April 1973.

TABLE 28

TABLE SHOWING NUMBER OF PASSENGER TICKETS SOLD AT RANDFONTEIN STATION

MONTH	TICKETS	EXTRA	SEASON
May 1972	30768	8278	3929
June	32902	8271	3713
July	33440	8752	4093
August	28309	8806	3505
September	32786	8112	3547
October	34188	10142	3586
November	35503	8917	3750
December	48180	17507	4134
January 1973	30605	8057	1802
February	37615	9940	3858
March	38890	9281	4479
April	39565	9013	3603
TOTAL	422751	115076	43999
TOTAL FOR ALL TICKETS	581826		
MONTHLY AVERAGE	48485		
DAILY AVERAGE	1616		

The "Extra" column reflects the number of tickets which have been sold on the train or written-issued at the station.

A closer record was kept during May 1973 to find out what percentage of tickets was bought by Whites and Non-Whites. During the recorded time in May 1973, a total of 15 727 tickets were bought: 11 939 by Non-Whites and 3788 by Whites. This gives a percentage of 76% for Non-Whites and 24% for Whites.

b) Goods

The following table shows the quantity of goods (in tons) received and forwarded by Randfontein Station during May 1972-April 1973.

TABLE 29

TABLE SHOWING GOODS (IN TONS) RECEIVED AND FORWARDED

MONTH	HANDLED		NOT HANDLED		FORWARDED		RECEIVED	
	For-warded	Re-ceived	For-warded	Re-ceived	Small live-stock	Large live-stock	Small live-stock	Large live stock
May 1972	256	1493	3691	9316	-	8	357	9
June	315	1297	4051	11112	13	16	294	-
July	203	475	3387	7525	-	10	307	9
August	404	1083	4072	8894	-	4	253	8
Sept.	218	1203	6191	8023	-	-	253	13
Oct.	347	1176	6137	9382	-	19	213	39
Nov.	261	1114	6619	8466	-	11	373	30
Dec.	974	8378	1059	10694	-	-	237	6
Jan. 1973	257	1051	5438	7592	-	-	181	46
Feb.	316	1048	5940	6582	-	-	128	4
March	361	1252	6197	9423	-	70	225	231
April	309	1197	6004	8569	10	-	142	2
Total	4221	20767	58786	105578	23	138	2963	397
Monthly Average	351	1730	4898	8798	2	12	246	33
Daily Average	11,7	57	163	293	0,06	0,4	8,2	1

The following goods are the most important:

i) Received: Kaffir Corn and Maize (For 'NCLA' - Malt)75%
Raw Wool, Synthetic Fibres (For textile factories) groceries (For 'Spar' Depot)25%

ii) Forwarded: Malt, Maize Meal and groceries 50-60%
Textile goods (Wool, Blankets) 40-50%

iii) Livestock: Small livestock is sheep, goats and pigs.

Large livestock is cattle and horses.

All the above goods are for the factories, either as raw materials or as manufactured goods.

Homelake

Passengers

The following table shows the number of passenger tickets sold at Homelake Station (I, II and III Class) during May 1972 - April, 1973.

TABLE 30

TABLE SHOWING NUMBER OF PASSENGER TICKETS SOLD AT HOMELAKE STATION

MONTH	TICKETS	EXTRA	SEASON
May 1972	1964	61	537
June	2013	79	602
July	2190	67	404
August	1849	91	655
September	2193	115	655
October	2280	121	673
November	2073	338	687
December	2394	646	436
January 1973	1813	344	551
February	1572	476	982
March	2413	158	664
April	1869	41	561
Total	24623	2537	7407
Total for All Tickets		34567	
Monthly Ave.	2880		
Daily Ave.	96		

Homelake is a small station which serves only suburban passenger trains. A large parking area for vehicles has been constructed at Homelake Station for use by the commuters.

Robinson

a) Passengers

The following table shows the number of passenger tickets sold at Robinson Station (I, II and III Class) during May 1972 - April, 1973.

TABLE 31

TABLE SHOWING NUMBER OF PASSENGER TICKETS SOLD AT ROBINSON STATION

MONTH	TICKETS	EXTRA	SEASON
May 1972	3553	245	266
June	3268	-	257
July	3645	272	281
August	3522	276	319
September	3664	435	276
October	3479	369	338
November	3336	459	305
December	4462	502	218
January 1973	3898	327	278
February	3236	501	325
March	4078	559	339
April	3652	-	368
Total	43793	3945	3570
Total for all Tickets	51308		
Monthly Ave.	4275		
Daily Ave.	142		

Robinson is the last station used by residents of Randfontein due to the fact that it is some distance from the larger

residential areas. It has a parking area to accommodate vehicles used by train travellers. A closer analysis of May 1973 passenger statistics was made to establish the percentage of White and Non-White users. A total of 3553 tickets were bought during May 1973; of these 2507 tickets were bought by Non-Whites and 1046 by Whites. This gives percentages of: Non-Whites - 70% and Whites - 30%.

b) Goods

The following table shows the quantity of goods (in tons) forwarded and received by Robinson during May 1972 - April 1973.

TABLE 32

TABLE SHOWING GOODS (IN TONS) FORWARDED AND RECEIVED BY ROBINSON STATION

MONTHS	HANDLED		NOT HANDLED	
	FORWARDED	RECEIVED	FORWARDED	RECEIVED
May 1972	1	2	11307	26270
June	2	5	10041	31257
July	5	7	9406	20620
August	2	4	12445	29313
September	3	4	9976	27674
October	2	6	11162	28797
November	4	2	10575	29455
December	2	-	10064	22378
January 1973	3	3	10064	29399
February	2	3	9736	27701
March	4	2	9422	28527
April	2	2	9535	35860
Total	32	40	123733	337251
Monthly Average	2,66	3,3	10311	28104
Daily Average	0,08	0,11	344	936

The following goods are the most important:

i)	Received:	Maize	40%
		Sunflower Seed	20%
		Groundnuts	15%
		Corn Meal	10%
		Maize and Corn bran	10%
		Sugar	5%
ii)	Forwarded:	Oil-cake meal	30%
		Cooking Oil	20%
		Cereals, Peanut= butter, Instant soup	20%
		Maize meal	10%
		Bantu Beer	10%
		Dog and Cat foods	10%

The above goods are either raw materials or manufactured products of the factories of the industrial area which lies North of Randfontein.

Fresh Cream

Because of the large number of smallholdings and surrounding farms, Randfontein has become a central forwarding-point for an appreciable amount of fresh cream. The following table shows the amount of cream forwarded (in gallons) during May 1972 - April 1973.

TABLE 33

TABLE SHOWING AMOUNT OF CREAM FORWARDED

MONTH	RANDFONTEIN	ROBINSON
May 1972	4100	50
June	-	72
July	4105	90
August	3950	54
September	2810	30
October	1421	86
November	4402	230
December	6083	37
January 1973	3261	-
February	4997	185
March	5695	-
April	4793	72
Total	45617	906
Monthly Ave.	3801	76
Daily Ave.	126	2

6.5.2 PUBLIC BUS SERVICES (As on the 16th February '73)

A. White Service

1. There are two major routes:
   i) Wheatlands to Randfontein -(terminus: Railway Station)
   ii) Randfontein to Venterspost -(terminus: Randfontein/Venterspost).

TIME TABLE

DAY	WHEATLANDS-RANDFONTEIN STATION	WHEATLANDS-RANDFONTEIN STATION
MONDAY TO FRIDAY	04h55 06h25 07h30 08h30 15h00 17h50	05h35 07h00 08h00 08h45 14h30 17h25 18h35
WEDNESDAY	10h20	
SATURDAY	05h20 06h25 07h30 08h30	05h55 07h00 08h00
	(From Randgate)12h55 (From Randgate)14h00	(To Randgate) 13h15 (To Wheatlands) 14h10

ii) Venterspost

A bus leaves Randfontein Railway Station for Venterspost every hour on the hour. A bus leaves Venterspost for Randfontein Railway Station every hour on the hour.

2. Number of passengers on routes

i) Monday to Friday - total per day in both directions:

Venterspost/Kocksoord/Randfontein	± 150
Wheatlands/Randgate/Randfontein	± 150
Randfontein/Venterspost Mine	± 60
Wheatlands/Randfontein trip at 04h55.	± 6

ii) Saturday - total per day in both directions:

Venterspost/Kocksoord/Randfontein	± 145
Wheatlands/Randgate/Randfontein	± 145

iii) During November 1972 a total of ± 8300 passengers was carried in both directions on all the European routes.

B. Bantu Services

The major service for Bantu passengers runs between Mohlakeng and Randfontein. Other routes run between Mohlakeng and Delmas and Mohlakeng and the Industrial Areas.

1. Service

TIME TABLE

DAY	MOHLAKENG – RANDFONTEIN STATION	RANDFONTEIN STATION – MOHLAKENG
MONDAY TO FRIDAY	04h05-05h05 every 10 min. 05h05-08h20 " 5 min. 08h20-09h40 " 10 " 09h40-12h00 " 20 " 12h00-14h30 " 10 " 14h30-18h05 " 5 " 18h05-19h45 " 10 " 19h45-21h50 " 20 " 21h50-22h45 " 30 "	04h55-06h25 - 07h50 05h30-06h40 - 08h15 05h40-06h45 - 08h40 05h55-06h50 - 08h50 06h10-07h05 - 09h00 06h15-07h10 - 09h20 06h20-07h35 - 09h40 10h00 10h00-12h20 every 20 min. 12h20-14h00 " 15 " 14h00-16h40 " 10 min. 16h40-18h45 " 5 " 18h45-19h45 " 15 "
SATURDAY	04h05-15h00 every 10 min. 15h00-17h00 " 20 " 17h00-21h30 " 30 "	04h05-15h00 every 10 min. 15h00-17h00 " 20 " 17h00-21h30 " 30 "
	Mohlakeng to Delmas	Delmas to Mohlakeng
	16 trips in morning	21 trips in the afternoon

2. Number of Passengers on routes

i) Monday to Friday - total per day in all directions:

± 8000 daily paying passengers

± 4000 weekly paying passengers

12000 Total daily

Of daily total ± 9500 - to and from Station

2000 - to and from Delmas

500 - to and from Industrial

12000 Areas or Contract.

ii) Saturday - total per day in all directions:

± 11000 passengers on Saturdays to and from Station

± 1000 " " " to Delmas and other

12000 areas.

C. Coloureds Service

There is no definite time-table as yet. The bus service will have to be based on a population of 10000. Of this number 3000 will use buses. Though no exact time-table has as yet been decided upon, the following will be considered: 9 buses each doing 2 trips per hour.

At peak times 600-800 passengers can be carried in one hour, if a five minute service is used. The route will be from Toekomsrus to the Sation. Trips will be made to the industrial areas as well.

6.5.3 SCHOOL BUSES

Randfontein has a very large smallholding area. The smallholdings include: Wheatlands, Botha Plots, Brandvlei, Elandsvlei, Wilbotsdal, Kocksoord, Hillside, Middelvlei, Pelzvale. The other areas from which pupils are transported to school in Randfontein are: West Rand Consolidated Mines, Luipaardsvlei, Zuurbekom, Lenz, Westonaria, Libanon, Glenharvie, Kloof, Waterpan, Venterspost, farms outside the Municipal area.

All school pupils, especially high school pupils must be brought to school daily. No school with the exception of the Technical High School has a hostel.

The buses used are supplied by contractors hired by the Transvaal Education Department. Pupils living further than

3,2 Km (2 miles) from their school are transported free of charge. Local pupils pay bus fare.

To transport the pupils 22 buses are used daily. These 22 buses constitute the main routes followed between Randfontein and the outlying areas. Some of these buses are also used for local routes through residential areas in town - there are 8 such routes. This gives a total of 30 routes, transporting between 1500 and 1800 pupils - approximately 33-40% of all school-going children.

The following table shows the number of pupils transported during 1972 and 1973 on 14 of the said buses. It must be stated that routes do change from year to year. Routes may be added and others withdrawn.

TABLE 34

TABLE SHOWING PUPILS TRANSPORTED PER BUS

NO.	ROUTES FROM SCHOOL TO VARIOUS AREAS	YEAR 1972	YEAR 1973
1	Randfontein High - Westonaria, Venterspost	90	76
2	Randfontein High- Westonaria	-	60
3	Randfontein High - Glenharvie, Kloof	51	80
4	Randfontein High - Zuurbekom, Lenz	54	56
5	Riebeeck Hoër - Rikasrust	82	80
6	Riebeeck Hoër - Avalonia	66	74
7	Riebeeck Hoër - Brandvlei	72	90
8	Riebeeck Hoër - Wheatlands, Dwarskloof	85	63
9	Riebeeck Hoër - Holfontein	72	72
10	Jan Viljoen - Westonaria	81	96
11	Jan Viljoen - Venterspost	-	79
12	Betsie VerVoerd - Luipaardsvlei	54	68
13	Randfontein Afrikaans Medium - Millsite	75	75
14	Riebeeck Hoër- Wheatlands, Elandsvlei		74
	No. 14 in 1972 was 2 routes:-		
	i) Klein Elandsvlei	73	
	ii) Groot Elandsvlei	45	
	TOTAL	900	1043

Routes No. 2 and 11 came into operation in 1973. Looking at the total number of pupils for the 2 years, it will be noticed that there is an increase of 14% from 1972 to 1973. The table shows only 14 of the 22 main routes.

The contractors are experiencing difficulties in keeping up with the number of routes and also in supplying an adequate number of buses to transport all the pupils. The only way in which this problem can be solved to some extent is to have hostels built at the schools.

The following is a summary of local routes i.e. within 3,2 Km of the school.

TABLE 35

TABLE SHOWING LOCAL SCHOOL BUS ROUTES

SCHOOLS USING LOCAL ROUTES	NUMBER OF PUPILS	
	2nd Tern 1972	2nd Tern 1973
Betsie Verwoerd	98	105
Randfontein Afrikaans Medium	98	133
Randfontein English Medium	82	41
Randfontein High School	16	10
Riebeeck and Jan Viljoen	9	5
TOTAL	303	294

The table shows the number of pupils from each school using the local routes. It will be noticed that the 3 primary schools use the local service to a greater extent than the high schools.

6.5.4 TAXI SERVICES

1. Registered Taxis

TABLE 36

TABLE SHOWING REGISTERED TAXIS

YEAR	EUROPEAN	BANTU
1972	9	9
1971	9	15
1972	9	24
1973	8	20

2. White

There is little demand for taxis and business is slow. Most of the trips are local or to the plots. The taxi-rank is at the Railway Station. Usually a maximum of 4 taxis will be parked at the rank. Few people take taxis from the rank at the station; business usually results from people requiring transport from their homes to the centre of town or vice-versa. To expedite unnecessary waiting, taxi owners take turns at the rank. Business in general is very slack and the taxi owners are pensioners.

3. Bantu

Most trips are between the Bantu Township and the Railway Station. The taxi ranks are at the Township and at the Railway Station. The taxis fall in line as they arrive at a rank. They all operate at the same time. Most of the business is found at the Railway Station or Township expecially at train arrival times. The busiest times are in the morning

and late afternoon. There is no telephone at the ranks.

4. Summary of other information

	WHITE	BANTU
Average number of trips on a weekday	7	20
Average number of trips on a Friday and Saturday	7-10	25-30
Average number of trips on a Sunday	3	10
Average number of passengers transported per trip	1-2	5-6
Average number of passengers transported on a weekday	7-20	90-110
Average number of passengers transported on a Friday, Saturday	12-24	120-160
Average number of passengers transported on a Sunday	1-7	40-60
Average distance travelled daily	±70 Km	±120 Km
Average distance travelled monthly	±2000 Km	±3500 Km

6.6 RESIDENTIAL AREAS

"Undoubtedly, more of the city's land is used for residences and associated grounds than for any other single purpose .... At least as important as space occupied, however, is the fact that urban areas contain the homes of over two-thirds of the country's people". (Murphy, 1966, pg. 369).

Because of the fact that residential areas in Randfontein make up most of the land-use function, a more intensive study of these areas was undertaken.

White

The site for each of the residential areas can be found in

figure 3 . A sociclogical study of each residential area was undertaken. This was done by using questionaires. Refer to Chapter 4 for the sociological study of the white residential areas.

Bantu.

The Mohlakeng Township is found to the south of the town (see fig. 3). Figures quoted in this section are as on the 30th December, 1974.

The total number of inhabitants in the township is 24133. The male population is 13403 and the female population 10730.

There is one hostel for men comprising 207 units housing 2990 Bantu.

The housing is divided as follows:

Rent:	2 roomed houses		236
	3 " "		1548
	4 " "		937
	5 " "		11
		Total	2732
Owner:	3 roomed houses		1
	4 " "		113
	5 " "		51
		Total	165
	Total No. of houses		2897

There are 7 school buildings and another one is under construction. Stands have been left open for more church buildings - 12 churches have already been built. The township has a recreational hall which is used for cinama shows, boxing and other indoor sports. This hall can seat 500 adults. The 3 soccer fields and tennis court make up the present sport facilities but the Bantu Administration is planning more sports fields.

The businesses owned by Bantu and found in the township can be summarized as follows:

General Dealers	10
Greengrocers	5
Butchers	4
Restaurants	4
Barber	1
Bicycle shop	1
Coal Dealers	3
Milk Depot	1
Drycleaners Depot	3
Taylor	1
Burial Service	1
Medical Consulting Rooms	2
Total	36

Mohlakeng has a health clinic with a staff comprising: 10 qualified nursing sisters, 2 White health inspectors and

1 Bantu female social worker.

There is one cemetery which borders on the township.

The number of people employed by the Bantu Administration who work in the township is 184.

White:	Male	6
	Female	1
	Total	7
Bantu:	Male	166
	Female	11
	Total	177

Coloured

Toekomsrus is a new Coloured township layed-out to the east of the town (see figure 3). Coloureds from Krugersdorp, Westonaria, Carletonville and Randfontein districts must be resettled in Toekomsrus. The first Coloureds moved into houses in Toekomsrus in February, 1973.

The total population is given as ± 5500. No exact figures are known by the local authorities. The housing can be summarized as follows:

Sub-economical:	2 roomed semi-detached houses	30
	3 " " " "	140
	4 " " " "	288
	Total	458

Economical:	2 Roomed semi-detached houses		10
	3 " " " "		32
	4 " " " "		102
		Total	144
Single houses:	4 roomed houses		305
		Total for all houses	907

Of the 907 houses, 905 are occupied, the other 2 are temporary offices for the municipality.

There are two school buildings, no sport or recreational facilities and no businesses as yet. The local authorities are busy establishing sports grounds and building a business centre. There is a clinic with 2 nursing sisters. The cemetery allocated to the township is the old Bantu cemetery.

6.7 PUBLIC SERVICES

Most of the government and municipal buildings are centrally situated near the C.B.D. These buildings are in close proximity to each other. The main area (refer to figure 11 ?) is found in the town area in a space of 4 blocks all opposite each other.

Government and Provincial.

The magistrates offices are to be found in the abovementioned area. Next to this building, housing the magistrates offices

is the inland revenue building. One block away to the east is the post office. The police station is situated in West Porges on the outskirts of the town's east side.

The Bantu Administration Offices are situated between the south side of the town and the industrial area.

Municipal.

The main municipal offices (including town hall) are found in the block between the magistrates offices and the post office. The library building which also houses the Town Engineer's department is situated opposite the Town Hall. The Traffic Department building with testing grounds, is found to the south behind the Town Hall.

The other services are found on the boundary of the built-up area or further out. The Fire Station and ambulance service is found outside the built-up area, to the south of the town. The station is not centrally situated and consequently areas to the west and north of the town are not easily reached in the event of an emergency.

The sewerage works are situated 1,5 Km west of Greenhills. This is comparatively near to the residential area and there are unpleasant odours coming from the works if the wind blows in a north-easterly to easterly direction.

There are two cemeteries. The older of the two is found in Kocksoord smallholdings, the newer one borders on the Greenhills residential area. This cemetery is also a barrier for expansion North-West of this residential area.

The municipality had a total of 622 workers in September,1975. The workers can be divided as follows:

White:	Male	164
	Female	38
	Total	202
Bantu:	Male	396
	Female	12
	Total	408
Coloured:		
	Male	11
	Female	1
	Total	12

6.8 EDUCATION

The location of the various schools can be found on the land-use map (figure 11).

White.

Secondary Schools.

There are three high schools situated in the town area of Randfontein.

They are: Jan Viljoen Technical and Commercial High School,
Riebeeck Hoërskool,
Randfontein High School.

The technical high school is situated at the south end of the main shopping area of the town on the Main Reef Road. This causes considerable traffic problems in the mornings and after school as a result of many school buses transporting the pupils. It is also dangerous for pupil pedestrians crossing this very busy street.However, the problem is alleviated by the robot at the northern corner of the school. This school has a boys' hostel. It is the only school with a hostel. The hostel is situated two blocks away in First Street.

Riebeeck Hoërskool is situated in Homelake Extension 1. This school is also situated on a very busy street (Van Riebeeck Street). The street is a dual road and carries all the traffic to and from the residential areas to the west (Randgate, Greenhills and the smallholdings). Traffic entering from the Carletonville and Ventersdorp roads use the same street. The traffic department is always on duty at this school in the mornings and in the afternoons when the school closes.

The English High School is situated in Greenhills. This school has the largest surface area of all the schools in Randfontein. It is situated in a very quiet area with no main traffic-carrying streets passing its gates.

Primary Schools

There are four primary schools in the town area. Rapportryer is situated in Randgate; Randfontein Afrikaans Medium in Homelake; Randfontein English Medium in the north of the town and Betsie Verwoerd in the south of the town. All except Betsie Verwoerd are situated in quiet areas. This school is situated next to the Technical High School and therefore has related problems as far as traffic is concerned.

There are three Afrikaans primary schools outside the town area: 2 in the smallholdings (Kocksoord and Wheatlands) and one outside the municipal area but still in the Randfontein Magisterial district (Rodora).

There is one convent which has only primary school pupils. This convent will be closing down in the near future. The convent is situated on the eastern boundary of Greenhills.

Table showing number of teachers and pupils found in White Schools (October 1974). (Refer to following page).

Bantu

There is one secondary school (Phahama) in the Bantu Township. This school carries Std. 7 to Std. 10. There are 2 higher primary schools (Mohlakeng and Sedimosang). These schools carry Std.3 to Std. 6. There are 3 lower primary schools (Matlapaneng, Malerato and Mahlokano) and they are from

Sub A to Std. 2. Two schools - Mohlakeng Night School and Bulelani combined - make up a total of 8 Bantu schools.

TABLE 37

SCHOOL AND MEDIUM	TEACHERS			TOTAL NUMBER	RATIO
SECONDARY SCHOOLS 1.	MALE	FEMALE	TOTAL	OF PUPILS	PUPILS/TEACHERS
Jan Viljoen High (A and E)	39	27	66	1058	16,0
Riebeeck Hoër (A)	25	23	48	952	19,8
Randfontein High (E)	12	15	27	508	18,8
TOTAL	76	65	141	2518	17,9
2. PRIMARY SCHOOLS					
Rapportryer (A)	6	21	27	730	27,0
Randfontein Afrikaans Medium	6	19	25	716	28,6
Randfontein English Medium	4	18	22	635	28,8
Betsie Verwoerd(A)	5	16	21	580	27,6
Kocksoord (A)	4	9	13	374	28,7
Radora (A)	2	7	9	222	24,6
Wheatlands (A)	1	8	9	200	22,2
Convent (E)	-	5	5	97	19,4
TOTAL	28	103	131	3554	27,1
TOTAL 1 + 2	104	168	272	6072	22,3

TABLE 38

TABLE SHOWING NUMBER OF TEACHERS AND PUPILS FOUND IN BANTU SCHOOLS (SEPTEMBER 1974)

NAME OF SCHOOL	TEACHERS			NUMBER OF PUPILS	RATIO PUPILS/TEACHER
	MALE	FEMALE	TOTAL		
Bulelani Combined	5	11	16	778	48,6
Malerato Lower Primary	-	10	10	613	61,3
Matlapaneng Lower Primary	1	8	9	539	59,8
Mohlakano Lower Primary	-	11	11	674	61,2
Mohlakeng Higher Primary	10	9	19	860	45,2
Mohlakeng Night School	2	2	4	72	18,0
Phahama Secondary	15	4	19	628	33,0
Sedimosang Higher Primary	7	4	11	433	39,3
TOTAL	40	59	99	4597	46,4

Coloured

There is a total of 3 schools: 1 secondary school (~~Randfontein~~ Hoërskool Randfontein ~~se Hoërskool~~) and 2 primary schools (~~Randfonteinse Laerskool~~ Laerskool Randfontein and ~~Toekomsrusse Laerskool~~ Laerskool Toekomsrus). The high school and Toekomsrus primary school are found in the new Coloured Township of Toekomsrus. The other primary school is found in the old Bantu location.

TABLE 39

TABLE SHOWING NUMBER OF TEACHERS AND PUPILS FOUND IN COLOURED SCHOOLS (APRIL 1975)

NAME OF SCHOOL	TEACHERS			NUMBER OF PUPILS	RATIO PUPILS/TEACHERS
	MALE	FEMALE	TOTAL		
~~Randfonteinse~~ Hoërskool Randfontein	11	2	13	300	23,0
~~Randfonteinse~~ Laerskool Randfontein	3	2	5	137	27,4
~~Toekomsrus~~ Laerskool Toekomsrus	10	16	26	1050	40,3
TOTAL	24	20	44	1487	33,8

6.9 CHURCHES

There are 20 church buildings in the white urban area of Randfontein - 11 in the town area (including West Porges); 3 in Homelake; 2 in Greenhills and 4 in Randgate.

The denominations represented are:

Afrikaans:

Nederduitse Gereformeerde Kerk	4
Nederduitse Hervormde Kerk	2
Gereformeerde Kerk	1
Apostoliese Geloof Sending van S.A.	1
Nuwe Apostoliese Kerk	1
Volle Evangelie Kerk van God	1
Pinkster Protestante	1

English:

Church of the Province of S.A.	1
Methodist Church of S.A.	1
Presbyterian Church	1
Roman Catholic Church	1
Baptist Church	1
Jewish Synagogue	1
Other Joha	1

alfabeties

Further analysis of the Afrikaans churches shows the following:

CHURCH	NUMBER OF MINISTERS	NUMBER OF MEMBERS
Nederduitse Gereformeerde - Randfontein	1	1020
Nederduitse Gereformeerde - Randfontein West	1	770
Nederduitse Gereformeerde - Randfontein North	2	1774
Nederduitse Gereformeerde - Randpoort	2	2194
TOTAL	6	5758
Nederduitse Hervormde - Randfontein	1	962
Nederduitse Hervormde - Randpoort	1	886
TOTAL	2	1848
Gereformeerde - Randfontein	1	750
TOTAL FOR THE 3 CHURCHES	9	8356

Missionary Activities.

All the major denominations are active in Bantu and Coloured fields. Most of them have a church building in the Bantu townships. In some cases resident Bantu or Coloured ministers or evangelists conduct the church affairs of their people.

6.10 RECREATION AND PARKS

The location of the recreational areas and parks can be found on the land-use map (figure 11).

The largest sports grounds are the municipal grounds called the "H.F. Verwoerd Stadium". This complex is in Greenhills. It consists of two rugby fields; a hockey field; a football field; an athletic track; jukskei and netball facilities are also provided. To the west of this stadium on the same large stand, are the "Central" tennis courts. In all there are 6 all-weather courts.

The Riebeeck Lake resort is a large area owned by the municipality. This area is situated east of Randgate and south of Greenhills. This resort has bungalows and camping and fishing facilities. A caravan park is being planned for this area in the near future. The municipal swimming bath is situated next to the lake and is of olympic standard.

There is a bowling green in the central town area very near to the C.B.D. (7th Street).

Robinson Lake is found outside the urban limit in the mining area north of the town. The lake is actually the result of local mines effluence. There is a swimming bath, boating, a night-club and bungalows.

There is another large recreational area which borders on the north-eastern side of Greenhills. This area belongs to the Randfontein Estate Mines and consists of a golf course, tennis courts and bowling greens.

Tennis courts are found at the police station on the eastern side of the town.

There are parks in all the residential areas. Not all the park areas shown on the land-use and zoning maps have been developed. The central town has one park with a playground for children. This park is behind the bowling greens mentioned earlier. In Homelake there is one park which has a playground for children and is situated behind the Afrikaans primary school. Greenhills has 4 parks, the largest of which has a playground. Randgate has a large park consis= ting of one complete street block. This park also contains a playground.

The parks in the newer residential areas will be developed commensurately with the development of such areas.

CHAPTER 7

ELECTRICITY AND WATER

7.1 ELECTRICITY

Randfontein Municipality buys electricity from ESCOM., a small amount is also purchased from the Randfontein Estates Mine for the outlying areas near the mine houses. The electricity supplied during 1971/72 was bought at the price of 0,4801 cents per unit and that of Randfontein Estates at 1,0675 cents per unit.

TABLE 40

TABLE SHOWING ELECTRICITY BOUGHT AND SOLD BY THE MUNICIPALITY

YEAR ENDING JUNE	UNITS BOUGHT	UNITS SOLD	% LOSS
1962/63	30 823 178	29 016 392	5,86
1963/64	36 125 331	33 599 046	6,99
1964/65	41 263 285	38 584 966	6,49
1965/66	48 051 882	44 978 546	6,40
1966/67	51 808 263	49 178 607	5,08
1967/68	56 248 379	53 561 781	4,78
1968/69	62 295 866	58 543 491	6,02
1969/70	68 652 583	64 315 180	6,32
1970/71	74 899 642	70 103 578	6,40
1971/72	85 238 611	79 399 706	6,85

If the above table is studied, it will be noticed that the amount of units sold each year is less than the amount of units bought. The difference between these two figures is the loss that occurs due to various forms of leakage (eg. faulty connec=

tions). The percentage loss shown in the 10 year period tabu= lated varies from 4,78% to 6,99%, and giving an average of 6,12% per year.

The accompanying graph showing electricity bought and sold (Figure 35) illustrates a constant increase in units bought and sold throughout the 10 year period with no fluctuations.

Electricity was supplied to users at the rate of 0,979 cents per unit in 1971/72.

7.2 WATER

Water is bought from the Rand Water Board. A small amount is also bought from Randfontein Estates. The water that was sup= plied during 1971/72 was bought at the price of 3,856 cents per kilolitre and that of Randfontein Estates at 11,001 cents per kilolitre.

TABLE 41

TABLE SHOWING WATER BOUGHT AND SOLD BY THE MUNICIPALITY

YEAR ENDING JUNE	KILOLITRES BOUGHT	KILOLITRES SOLD	% LOSS
1962/63	2 389 259	2 088 046	12,61
1963/64	2 785 359	2 254 582	19,06
1964/65	3 107 650	2 735 321	11,98

Graph showing electricity bought and sold.

fig. 35

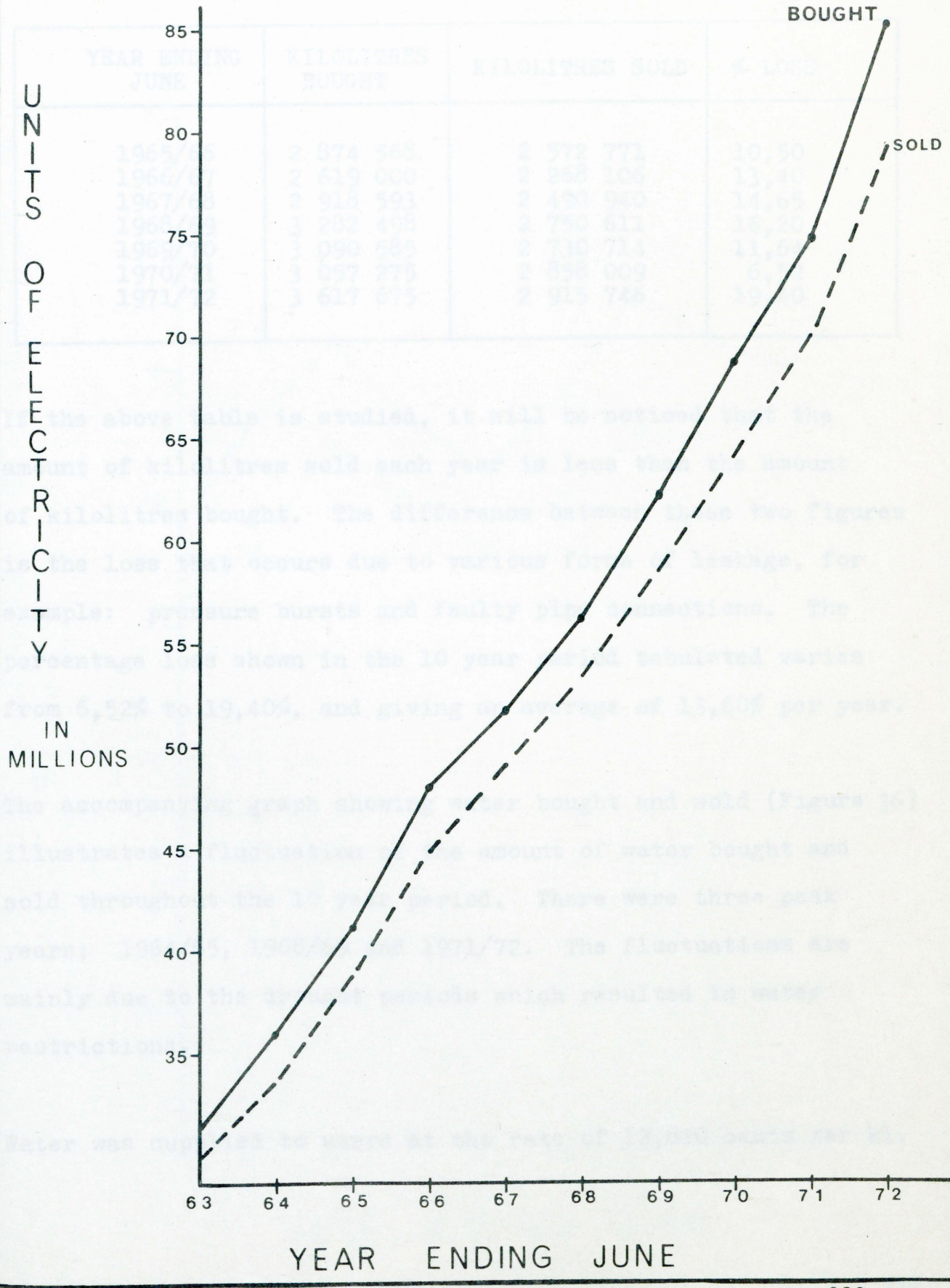


TABLE 41 (continued)

TABLE SHOWING WATER BOUGHT AND SOLD BY THE MUNICIPALITY

YEAR ENDING JUNE	KILOLITRES BOUGHT	KILOLITRES SOLD	% LOSS
1965/66	2 874 568	2 572 771	10,50
1966/67	2 619 000	2 268 106	13,40
1967/68	2 918 593	2 490 940	14,65
1968/69	3 282 498	2 750 611	16,20
1969/70	3 090 585	2 730 714	11,64
1970/71	3 057 275	2 858 009	6,52
1971/72	3 617 675	2 915 746	19,40

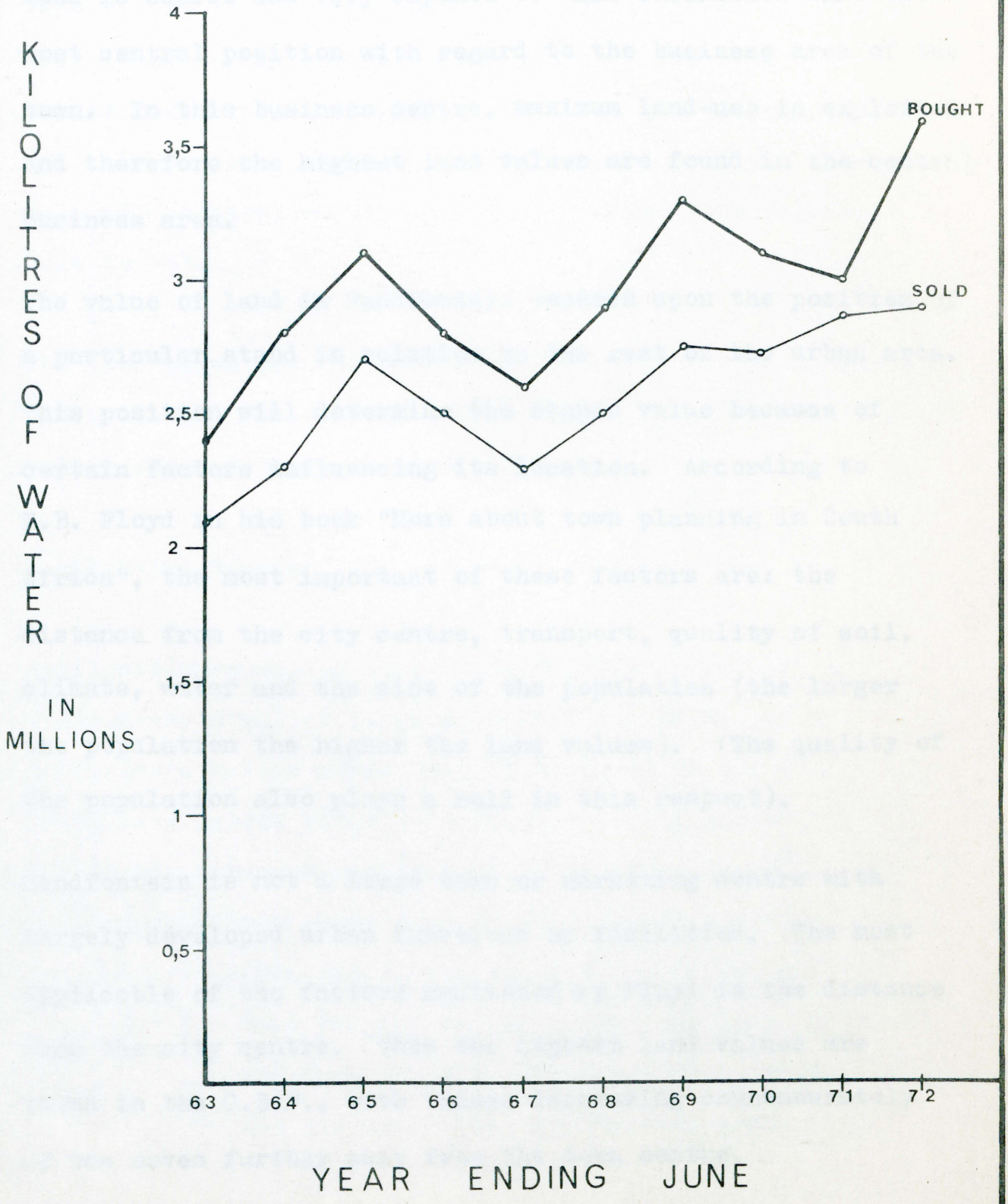
If the above table is studied, it will be noticed that the amount of kilolitres sold each year is less than the amount of kilolitres bought. The difference between these two figures is the loss that occurs due to various forms of leakage, for example: pressure bursts and faulty pipe connections. The percentage loss shown in the 10 year period tabulated varies from 6,52% to 19,40%, and giving an average of 13,60% per year.

The accompanying graph showing water bought and sold (Figure 36) illustrates a fluctuation of the amount of water bought and sold throughout the 10 year period. There were three peak years; 1964/65, 1968/69 and 1971/72. The fluctuations are mainly due to the drought periods which resulted in water restrictions.

Water was supplied to users at the rate of 12,820 cents per kl.

Graph showing water bought and sold.

fig. 36



CHAPTER 8

LAND VALUES IN RANDFONTEIN

The business centre of any town is usually the area where land is scarce and very expensive. All businesses want the most central position with regard to the business area of the town. In this business centre, maximum land-use is exploited and therefore the highest land values are found in the central business area.

The value of land in Randfontein depends upon the position of a particular stand in relation to the rest of the urban area. This position will determine the stands value because of certain factors influencing its location. According to T.B. Floyd in his book "More about town planning in South Africa", the most important of these factors are: the distance from the city centre, transport, quality of soil, climate, water and the size of the population (the larger the population the higher the land values). (The quality of the population also plays a roll in this respect).

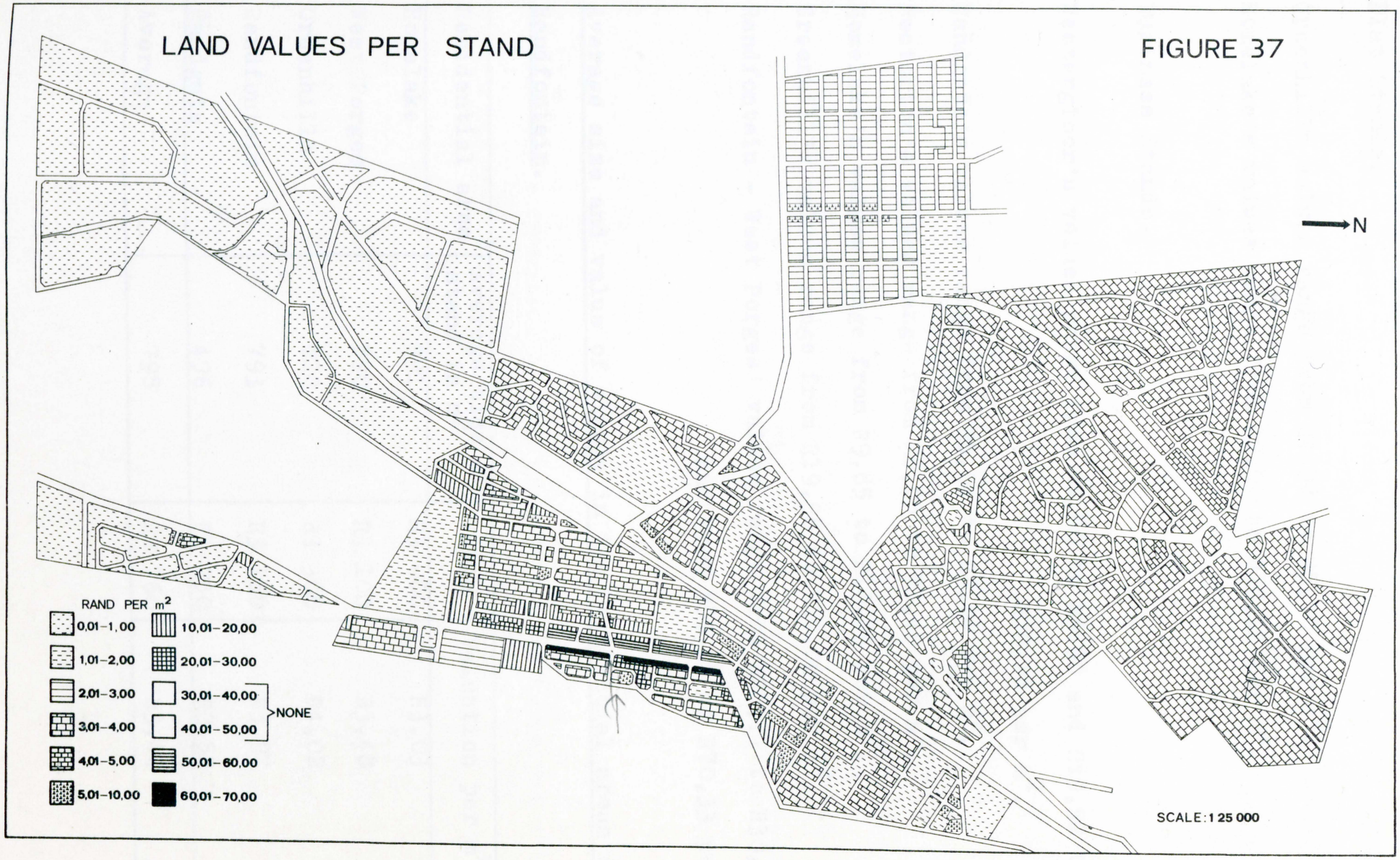
Randfontein is not a large town or marketing centre with largely developed urban functions or facilities. The most applicable of the factors mentioned by Floyd is the distance from the city centre. Thus the highest land values are found in the C.B.D., with values decreasing commensurately as one moves further away from the town centre.

The map showing the land values per stand (figure 37) illustrates clearly that the highest land value for the urban area is found along the Main Reef Road which is the centre of the C.B.D. The land values decrease away from this area in all directions. There are islands of higher land values further away but they are still not as high as that found in the business area and they are usually residential business stands. The large area to the south with the minimum land value is the main industrial area. This map is based on the latest Government land valuation done in 1974.

The land valuation for Randfontein in 1974 can be summarized under all the residential areas. The industrial area's stand values range from R0,10 to R1,10 per m^2.

Residential Stands.

Smallholding's values range from R0,07 to R1,00 per m^2.
Westergloor's values range from R0,67 to R0,84 per m^2.
Hectorton's values range from R1,94 to R2,02 per m^2.
Randgate's values range from R2,44 to R2,54 per m^2.
Homelake's values range from R2,48 to R3,53 per m^2.
Finsbury's values range from R2,53 to R4,02 per m^2.
Greenhill's values range from R3,49 to R4,02 per m^2.
Randfontein - West Porges' values range from R3,47 to R3,63 and from R5,07 to R5,55 per m^2 depending on the distance from the business area.


LAND VALUES PER STAND
FIGURE 37
N
RAND PER m²
0,01–1,00
1,01–2,00
2,01–3,00
3,01–4,00
4,01–5,00
5,01–10,00
10,01–20,00
20,01–30,00
30,01–40,00
40,01–50,00
NONE
50,01–60,00
60,01–70,00
SCALE: 1 25 000

Flat Stands.

Greenhill's values range from R4,98 to R5,00 per m^2.

Homelake's values range from R9,97 to R10,12 per m^2.

Business Stands.

Westergloor's values range from R4,86 to R9.98 and R19,92 to R20,18 per m^2.

Randgate's values range from R5,04 to R6,04 per m^2.

Hectorton's values range from R5,05 to R7,49 per m^2.

Homelake's values range from R9,85 to R10,85 per m^2.

Greenhill's values range from R19,98 to R22,00 per m^2.

Randfontein - West Porges' values range from R25,77 to R30,00 and from R59,95 to R70,33 per m^2.

Average size and value of stands in the Residential areas of Randfontein.

Residential area	Average size of stand in m^2	Value	Valuation per m^2
Homelake	991	R3 000	R3,03
West Porges	890	R3 100	R3,48
Greenhills	820	R3 300	R4,02
Randfontein	793	R3 150	R3,97
Randgate	496	R1 250	R2,52
Average	798	R2 760	R3,40

The residential area Westergloor, was not used in the above calculation because this area is an economic housing area and will not reflect normal conditions. The figure of R3,40 per m^2 can thus be used as an average for a residential stand in Randfontein.

In summary it can be stated that in all cases (residential, flat, and business stands), land values are the highest near the business centre. The land values on the east side of Main Reef Road are higher (R60,01 to R70,00 per m^2) than the west side (R50,01 to R60,00 per m^2). The reason for this is that there are new and more modern buildings on the east side of the business area. The land values decrease outward in the residential areas.

RATEABLE VALUATION

The rateable valuation of Randfontein can be illustrated by comparing 1961 figures to 1971 (in Rands).

June 1961	Taxable	June 1971
5 883 910	Stands	11 136 876
14 177 680	Buildings	24 924 709
5 759 654	Not taxable	5 961 160
25 821 244	Total	42 022 745

CHAPTER 9

EPILOGUE

9.1 SUMMARY AND INTERPRETATION

This section will be set out according to the aims indicated earlier.

i) Historical Origins

During the early gold mining days it was thought that the reef mined in the Johannesburg area simply dipped and then finally disappeared. However, once it was discovered that the reef continued out in a Westward direction miners moved in the same direction. A mining company started mining in the Randfontein area and soon the Randfontein Estates became one of the richest gold-mines in the world. In 1932 South Africa abandoned the Gold Standard - a boom in gold shares resulted. Old mines were reprieved and low-grade ore became payable. Mining continued through the second World War. Because of a struggle against adverse conditions experienced during 1953 - 1963 Randfontein started producing uranium in 1952. In 1965, this stopped. Since 1952 Randfontein has not been regarded as one of the prime gold-producing towns.

Even such a short resumé of the history of gold mining shows that Randfontein owes its genesis to the mining movements. During its earlier days the towns' fortunes must also have

been largely determined by the prevailing mining conditions. 1948 saw many changes, the most important perhaps was the establishment of a milling company as the first major industry.

ii) Decline of the Mines Influence

The future of the mines was unpredictable. Fortunately for the town the amount of uranium found in the ore was high. As a direct result of the fluctuating conditions of gold-mining the uranium reduction plant was opened in 1952. Together with this, new industries moved into the Randfontein area. These were predominantly food-producing industries, and soon associated industries began to appear.

Due to the mines Randfontein had rail-links with Johannesburg and the Western Transvaal as early as the late 1800's. The new industries therefore had no problems with transport. Randfontein is also situated at a convenient distance from the main maize-producing areas of the Western Transvaal. Whereas previously people were drawn to Randfontein in order to work on the mines, labour offered by the industries now became an added attraction. The town, which was fast becoming an industrial centre, had been given a new lease on life. With the changing industrial climate Randfontein had to provide the facilities required by a rapidly expanding urban area.

iii) Functions and Administrative Independence

Even though Randfontein became an independent municipal area in 1929 and was declared a magisterial district in 1948, it was only as the population grew, due to the influx of workers, that more comprehensive urban facilities became necessary. Naturally all governmental departments took up office after 1948.

New residential areas were created and spread westward of the old town area. Homelake, established in 1936 was soon supplemented by the proclamation of Greenhills as a residential area only 14 years later in 1950. Aureus was proclaimed an industrial area. Not only was there expansion in the central business area in order to cater for the immediate needs of the people, but light industries such as engineering firms, which supplied the mines on a small scale, also sprang up, creating a richer commercial sector. Railway links were electrified, and the Town Council was obliged to increase its budget to keep pace with the ever increasing expansion and the demand for municipal services.

iv) Influence of Reef Towns and City

One of the beauties of Randfontein is that it is far enough away from the city of Johannesburg to enjoy a rural atmosphere and yet close enough to the city to provide more competitive working conditions, more varied commercial

propositions and more sophisticated social amenities for those seeking them. The transport facilities between Randfontein and Johannesburg including most of the other reef towns, are excellent. The analysis of railway traffic discussed fully earlier in this study indicates the freedom of movement to and from Randfontein. The fact that the reef towns including Johannesburg have developed along the main reef road is not the least important reason for the alacrity with which the residents of Randfontein undertake journeys along the reef area.

v) Development along the Main Reef Road

The town of Randfontein developed along the Main Reef Road. Commercially this is beneficial to the town because the road provides a connecting link between the East Rand - passing through Johannesburg - the West Rand and Western Transvaal. This lack of a transport problem has been a boon especially for the industries. Development of mines on the far West Rand (e.g. Westonaria) also along the Main Reef Road, has provided Randfontein with a greater number of residents as well as casual visitors. However attractive the benefits of this development might be it has caused considerable problems particularly in connection with traffic and parking in the central town area.

9.2 CONCLUSION

The opening of the new Cooke Section by the mines; production figures in both the mining industry and other industries remaining constantly good or rising; the growing necessity for a larger English primary school together with the escalating numbers of pupils in all the high schools; the phenomenal growth of new residential areas over the past five years; the building of new bridges and roads; the erection of a new multi-million Rand milling complex - all these indicate the general trend of Randfontein's present expansion pattern. The excellent communications - both rail and road - between the reef and the Western Transvaal coupled with an Electricty and Water Supply from E S C O M and Rand Water Board respectively, gives the town an enviable industrial advantage. Extensive industrial areas have been proclaimed. Inexpensive stands are large. Labour too presents no problems. The Bantu township of Mohlakeng together with Toekomsrus, the Coloured settlement, provides the industries with a rich source of labour.

These factors together with the town's progressive character cannot fail to result in Randfontein becoming one of the major industrial ~~giants~~ centres of the ~~future~~. Rand

A
B

SOCIAL STUDY QUESTIONNAIRE

INDICATE by means of a CROSS, NUMBER or WORD in the relevant block.

1. RESIDENTIAL AREA:

Town	Greenhills	Homelake	Randgate
Finsbury	Plot		

2. TYPE OF DWELLING:

Own House	Rented House	Flat	Plot

3. OCCUPATION OF HEAD OF FAMILY:

4. NUMBER OF PERSONS IN DWELLING:

How many of those in (4) are (a) EMPLOYED?

(b) SCHOOL GOING?

5. AGE:

Age:	Under 6	6-18	19-30	31-40	41-50	51-60	Above 60
Number:							
Number possessing licence							

6. NUMBER OF VEHICLES:

Type:	Cars	"Bakkies" and other L.D.V's	Heavy Vehicles	Motor-cycles
Number:				

7. MAJORITY OF GENERAL PURCHASES MADE BY:

Husband	Wife	Children

8. TYPE OF TRANSPORT TO SHOPPING CENTRES

Car	Bus	Walking	Other

9. IS THERE A BUS SERVICE NEAR YOUR HOME? YES / NO

(a) If YES, do you make use of it? YES / NO

(b) If NO, would such a service be desirable? YES / NO

(c) If (9b) YES, (i) on what days?

(ii) Times?

10. WHERE DO YOU BUY THE FOLLOWING? (Make a Cross)

	Own Residential Area	Randfontein	Krugersdorp & West Rand Towns	Johannesburg	Others Specify
FURNITURE					
HARDWARE					
GROCERIES					
CLOTHING					
SPECIAL GIFTS					

F

MANUFACTURING QUESTIONNAIRE

1. Name of firm: .....

2. Type of business (eg. textile factory, panelbeaters etc.):
.....

3. Area
   i. Stand .....
   ii. Buildings .....

4. Staff
   i. White:- Male .....
      Female .....
   ii. Bantu:- Male .....
      Female .....
   iii. Coloured:-
      Male .....
      Female .....

5. Transport
   Number of:-
   i. Company vehicles .....
   ii. Heavy vehicles (also busses) .....
   iii. Private vehicles parked on terrain .....

6. Raw materials used:

Type	Source
.....	.....
.....	.....
.....	.....
.....	.....

7. Manufactured Products.

Type	Destination
.....	.....
.....	.....
.....	.....
.....	.....

8. Production Figures (if applicable)
   Name type and yearly production figures.
.....
.....
.....
.....

9. Stand number .....

10. Siding Yes/No.

TABLE 1a

TABLES SHOWING VEHICLE COUNTS IN THE C.B.D.

ON A WEEKDAY - WEDNESDAY 28/3/73

(Refer to figure 15 for the location of the counting positions).

c/o Sutherland /Village streets Position: 1

	FROM C.B.D.			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	49	5	54	57	8	65
08h30-09h00	44	10	54	40	9	49
TOTAL:	93	15	108	97	17	114
09h00-09h30	48	31	79	31	14	45
09h30-10h00	47	40	87	37	17	54
TOTAL:	95	71	166	68	31	99
10h00-10h30	68	19	87	58	20	78
10h30-11h00	51	19	70	39	17	56
TOTAL:	119	38	157	97	37	134
11h00-11h30	48	18	66	36	28	64
11h30-12h00	71	26	97	65	15	80
TOTAL:	119	44	163	101	43	144
12h00-12h30	57	16	73	33	23	56
12h30-13h00	51	10	61	45	21	66
TOTAL:	108	26	134	78	44	122
13h00-13h30	34	8	42	27	7	34
13h30-14h00	38	7	45	36	10	46
TOTAL:	72	15	87	63	17	80
14h00-14h30	55	13	68	35	9	44
14h30-15h00	37	22	59	22	13	35
TOTAL:	92	35	127	57	22	79
15h00-15h30	32	11	43	34	11	45
15h30-16h00	41	11	52	41	12	53
TOTAL:	73	22	95	75	23	98
16h00-16h30	48	24	72	38	21	59
16h30-17h00	50	10	60	23	14	37
TOTAL:	98	34	132	61	35	96
GRAND TOTAL:	869	300	1169	696	269	965

TOTAL NUMBER OF CARS: 1565

TOTAL NUMBER OF TRUCKS: 569

TOTAL NUMBER OF VEHICLES: 2134

TABLE 1a (contd.)

c/o Sixth/Village streets Position: 2

TIME	FROM C.B.D.			TO C.B.D.		
	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	38	10	48	180	10	190
08h30-09h00	46	11	57	100	21	121
TOTAL:	84	21	105	280	31	311
09h00-09h30	39	17	56	86	48	134
09h30-10h00	41	28	69	96	42	138
TOTAL:	80	45	125	182	90	272
10h00-10h30	61	38	99	107	35	142
10h30-11h00	58	25	83	100	37	137
TOTAL:	119	63	182	207	72	279
11h00-11h30	61	13	74	82	27	109
11h30-12h00	46	17	63	60	14	74
TOTAL:	107	30	137	142	41	183
12h00-12h30	72	17	89	76	23	99
12h30-13h00	42	30	72	64	27	91
TOTAL:	114	47	161	140	50	190
13h00-13h30	90	24	114	73	19	92
13h30-14h00	49	21	70	111	28	139
TOTAL:	139	45	184	184	47	231
14h00-14h30	79	18	97	130	35	165
14h30-15h00	64	25	89	74	33	107
TOTAL:	143	43	186	204	68	272
15h00-15h30	61	24	85	84	23	107
15h30-16h00	58	34	92	86	30	116
TOTAL:	119	58	177	170	53	223
16h00-16h30	76	12	88	81	19	100
16h30-17h00	107	26	133	121	28	149
TOTAL:	183	38	221	202	47	249
GRAND TOTAL:	1088	388	1476	1711	499	2210

TOTAL NUMBER OF CARS: 2799

TOTAL NUMBER OF TRUCKS: 887

TOTAL NUMBER OF VEHICLES: 3686

TABLE 1a (contd.)

c/o Seventh/Village streets Position: 3

	FROM C.B.D.			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	12	1	13	5	-	5
08h30-09h00	8	1	9	9	2	11
TOTAL:	20	2	22	14	2	16
09h00-09h30	13	5	18	11	3	14
09h30-10h00	19	7	26	16	4	20
TOTAL:	32	12	44	27	7	34
10h00-10h30	22	9	31	16	8	24
10h30-11h00	34	9	43	31	7	38
TOTAL:	56	18	74	47	15	62
11h00-11h30	23	10	33	31	9	40
11h30-12h00	25	4	29	17	8	25
TOTAL:	48	14	62	48	17	65
12h00-12h30	49	11	60	35	4	39
12h30-13h00	22	-	22	25	-	25
TOTAL:	71	11	82	60	4	64
13h00-13h30	20	4	24	21	3	24
13h30-14h00	13	-	13	13	-	13
TOTAL:	33	4	37	34	3	37
14h00-14h30	8	8	16	22	6	28
14h30-15h00	14	7	21	25	4	29
TOTAL:	22	15	37	47	10	57
15h00-15h30	26	6	32	31	3	34
15h30-16h00	27	3	30	29	2	31
TOTAL:	53	9	62	60	5	65
16h00-16h30	41	1	42	26	3	29
16h30-17h00	39	-	39	15	1	16
TOTAL:	80	1	81	41	4	45
GRAND TOTAL:	415	86	501	378	67	445

TOTAL NUMBER OF CARS: 793

TOTAL NUMBER OF TRUCKS: 153

TOTAL NUMBER OF VEHICLES: 946

TABLE 1a (contd.)

c/o Eighth/Village streets — Position: 4

TIME	FROM C.B.D.			TO C.B.D.		
	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	14	4	18	11	-	11
08h30-09h00	28	2	30	5	4	9
TOTAL:	42	6	48	16	4	20
09h00-09h30	30	1	31	6	1	7
09h30-10h00	40	3	43	14	1	15
TOTAL:	70	4	74	20	2	22
10h00-10h30	31	9	40	12	2	14
10h30-11h00	35	6	41	14	1	15
TOTAL:	66	15	81	26	3	29
11h00-11h30	29	6	35	14	2	16
11h30-12h00	19	1	20	11	4	15
TOTAL:	48	7	55	25	6	31
12h00-12h30	31	1	32	12	1	13
12h30-13h00	24	5	29	12	-	12
TOTAL:	55	6	61	24	1	25
13h00-13h30	29	3	32	13	1	14
13h30-14h00	18	3	21	9	-	9
TOTAL:	47	6	53	22	1	23
14h00-14h30	22	8	30	8	3	11
14h30-15h00	42	7	49	11	7	18
TOTAL:	64	15	79	19	10	29
15h00-15h30	26	6	32	13	3	16
15h30-16h00	30	5	35	9	4	13
TOTAL:	56	11	67	22	7	29
16h00-16h30	40	7	47	22	3	25
16h30-17h00	42	7	49	13	2	15
TOTAL:	82	14	96	35	5	40
GRAND TOTAL:	530	84	614	209	39	248

TOTAL NUMBER OF CARS: 739

TOTAL NUMBER OF TRUCKS: 123

TOTAL NUMBER OF VEHICLES: 862

TABLE 1a (contd.)

Main Reef Road - North — Position: 5

TIME	FROM C.B.D.			TO C.B.D.		
	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	70	37	107	112	34	146
08h30-09h00	95	50	145	137	21	158
TOTAL:	165	87	252	249	55	304
09h00-09h30	123	57	180	124	33	157
09h30-10h00	126	46	172	112	44	156
TOTAL:	249	103	352	236	77	313
10h00-10h30	118	49	167	116	60	176
10h30-11h00	125	41	166	143	55	198
TOTAL:	243	90	333	259	115	374
11h00-11h30	134	56	190	128	37	165
11h30-12h00	123	50	173	122	44	166
TOTAL:	257	106	363	250	81	331
12h00-12h30	93	45	138	140	51	191
12h30-13h00	129	46	175	103	40	143
TOTAL:	222	91	313	243	91	334
13h00-13h30	104	24	128	104	29	133
13h30-14h00	137	49	186	114	42	156
TOTAL:	241	73	314	218	71	289
14h00-14h30	101	60	161	128	46	174
14h30-15h00	129	52	181	116	48	164
TOTAL:	230	112	342	244	94	338
15h00-15h30	141	47	188	127	38	165
15h30-16h00	172	64	236	135	29	164
TOTAL:	313	111	424	262	67	329
16h00-16h30	166	53	219	136	34	170
16h30-17h00	189	40	229	145	44	189
TOTAL:	355	93	448	281	78	359
GRAND TOTAL:	2277	866	3143	2242	729	2971

TOTAL NUMBER OF CARS: 4519

TOTAL NUMBER OF TRUCKS: 1595

TOTAL NUMBER OF VEHICLES: 6114

TABLE 1a (contd.)

c/o Edwin/Main streets — Position: 6

	FROM C.B.D.			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	9	5	14	9	1	10
08h30-09h00	10	2	12	6	1	7
TOTAL:	19	7	26	15	2	17
09h00-09h30	13	-	13	12	-	12
09h30-10h00	14	-	14	16	3	19
TOTAL:	27	-	27	28	3	31
10h00-10h30	5	2	7	11	1	12
10h30-11h00	9	-	9	15	1	16
TOTAL:	14	2	16	26	2	28
11h00-11h30	8	3	11	14	1	15
11h30-12h00	9	2	11	10	-	10
TOTAL:	17	5	22	24	1	25
12h00-12h30	7	-	7	13	1	14
12h30-13h00	7	3	10	11	2	13
TOTAL:	14	3	17	24	3	27
13h00-13h30	13	-	13	15	4	19
13h30-14h00	5	1	6	7	2	9
TOTAL:	18	1	19	22	6	28
14h00-14h30	8	4	12	9	-	9
14h30-15h00	7	1	8	11	4	15
TOTAL:	15	5	20	20	4	24
15h00-15h30	7	3	10	8	3	11
15h30-16h00	5	1	6	12	3	15
TOTAL:	12	4	16	20	6	26
16h00-16h30	20	2	22	19	5	24
16h30-17h00	13	1	14	20	3	23
TOTAL:	33	3	36	39	8	47
GRAND TOTAL:	169	30	199	218	35	253

TOTAL NUMBER OF CARS: 387

TOTAL NUMBER OF TRUCKS: 65

TOTAL NUMBER OF VEHICLES: 452

TABLE 1a (contd.)

c/o Duncan / San Remo streets Position: 7

	FROM C.B.D.			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	28	1	29	20	4	24
08h30-09h00	12	2	14	15	5	20
TOTAL:	40	3	43	35	9	44
09h00-09h30	11	2	13	10	3	13
09h30-10h00	11	4	15	11	7	18
TOTAL:	22	6	28	21	10	31
10h00-10h30	8	3	11	14	6	20
10h30-11h00	16	2	18	26	4	30
TOTAL:	24	5	29	40	10	50
11h00-11h30	13	2	15	8	5	13
11h30-12h00	9	1	10	5	-	5
TOTAL:	22	3	25	13	5	18
12h00-12h30	14	3	17	21	7	28
12h30-13h00	13	-	13	22	9	31
TOTAL:	27	3	30	43	16	59
13h00-13h30	12	2	14	15	4	19
13h30-14h00	11	2	13	11	3	14
TOTAL:	23	4	27	26	7	33
14h00-14h30	19	1	20	10	1	11
14h30-15h00	7	-	7	14	3	17
TOTAL:	26	1	27	24	4	28
15h00-15h30	6	-	6	9	5	14
15h30-16h00	13	1	14	18	5	23
TOTAL:	19	1	20	27	10	37
16h00-16h30	17	-	17	15	7	22
16h30-17h00	22	-	22	21	1	22
TOTAL:	39	-	39	36	8	44
GRAND TOTAL:	242	26	268	265	79	344

TOTAL NUMBER OF CARS: 507

TOTAL NUMBER OF TRUCKS: 105

TOTAL NUMBER OF VEHICLES: 612

TABLE 1a (contd.)

c/o San Remo / Duncan streets Position: 8

	FROM C.B.D.		
TIME	CARS	TRUCKS	TOTAL
08h00-08h30	13	2	15
08h30-09h00	13	5	18
TOTAL:	26	7	33
09h00-09h30	10	5	15
09h30-10h00	16	4	20
TOTAL:	26	9	35
10h00-10h30	24	1	25
10h30-11h00	23	2	25
TOTAL:	47	3	50
11h00-11h30	13	1	14
11h30-12h00	6	4	10
TOTAL:	19	5	24
12h00-12h30	22	5	27
12h30-13h00	15	2	17
TOTAL:	37	7	44
13h00-13h30	5	1	6
13h30-14h00	4	1	5
TOTAL:	9	2	11
14h00-14h30	11	2	13
14h30-15h00	10	4	14
TOTAL:	21	6	27
15h00-15h30	8	-	8
15h30-16h00	14	2	16
TOTAL:	22	2	24
16h00-16h30	19	1	20
16h30-17h00	18	2	20
TOTAL:	37	3	40
GRAND TOTAL	244	44	288

TOTAL NUMBER OF CARS: 244

TOTAL NUMBER OF TRUCKS: 44

TOTAL NUMBER OF VEHICLES: 288

TABLE 1a (contd.)

c/o Cecil and Main streets Position: 9

	FROM C.B.D.			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	72	36	108	52	35	87
08h30-09h00	58	43	101	58	33	91
TOTAL:	130	79	209	110	68	178
09h00-09h30	47	25	72	59	23	82
09h30-10h00	57	25	82	71	22	93
TOTAL:	104	50	154	130	45	175
10h00-10h30	51	20	71	41	18	59
10h30-11h00	55	11	66	28	11	39
TOTAL:	106	31	137	69	29	98
11h00-11h30	39	8	47	46	14	60
11h30-12h00	46	3	49	37	8	45
TOTAL:	85	11	96	83	22	105
12h00-12h30	43	4	47	47	9	56
12h30-13h00	33	11	44	46	8	54
TOTAL:	76	15	91	93	17	110
13h00-13h30	47	14	61	41	14	55
13h30-14h00	44	10	54	32	12	44
TOTAL:	91	24	115	73	26	99
14h00-14h30	55	2	57	46	2	48
14h30-15h00	62	20	82	48	5	53
TOTAL:	117	22	139	94	7	101
15h00-15h30	45	14	59	46	14	60
15h30-16h00	44	3	47	43	5	48
TOTAL:	89	17	106	89	19	108
16h00-16h30	45	3	48	31	2	33
16h30-17h00	53	28	81	30	9	39
TOTAL:	98	31	129	61	11	72
GRAND TOTAL:	896	280	1176	802	244	1046

TOTAL NUMBER OF CARS: 1698

TOTAL NUMBER OF TRUCKS: 524

TOTAL NUMBER OF VEHICLES 2222

TABLE 1a (contd.)

Main Reef Road - South — Position: 10

	FROM C.B.D			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	56	44	100	45	29	74
08h30-09h00	56	45	101	68	31	99
TOTAL:	112	89	201	113	60	173
09h00-09h30	45	27	72	46	24	70
09h30-10h00	46	20	66	48	20	68
TOTAL:	91	47	138	94	44	138
10h00-10h30	44	17	61	38	18	56
10h30-11h00	43	5	48	32	11	43
TOTAL:	87	22	109	70	29	99
11h00-11h30	44	14	58	48	15	63
11h30-12h00	36	6	42	45	13	58
TOTAL:	80	20	100	93	28	121
12h00-12h30	43	5	48	49	7	56
12h30-13h00	44	7	51	38	7	45
TOTAL:	87	12	99	87	14	101
13h00-13h30	45	3	48	37	10	47
13h30-14h00	38	2	40	31	3	34
TOTAL:	83	5	88	68	13	81
14h00-14h30	41	4	45	26	4	30
14h30-15h00	50	13	63	51	8	59
TOTAL:	91	17	108	77	12	89
15h00-15h30	53	24	77	47	18	65
15h30-16h00	41	2	43	23	4	27
TOTAL:	94	26	120	70	22	92
16h00-16h30	55	4	59	41	9	50
16h30-17h00	55	12	67	35	20	55
TOTAL:	110	16	126	76	29	105
GRAND TOTAL:	825	254	1079	748	251	999

TOTAL NUMBER OF CARS: 1573

TOTAL NUMBER OF TRUCKS: 505

TOTAL NUMBER OF VEHICLES: 2078

TABLE 1b

TABLES SHOWING VEHICLE COUNTS IN THE C.B.D. ON A SATURDAY - 26/5/73

(Refer to figure for the location of the counting positions).

c/o Sutherland/Village streets Position: 1

	FROM C.B.D			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h15	14	1	15	23	-	23
08h15-08h30	30	1	31	58	1	59
08h30-08h45	37	1	38	48	4	52
08h45-09h00	35	2	37	70	5	75
TOTAL:	116	5	121	199	10	209
09h00-09h15	11	-	11	31	-	31
09h15-09h30	33	3	36	52	3	55
09h30-09h45	36	2	38	38	3	41
09h45-10h00	49	-	49	73	3	76
TOTAL:	129	5	134	194	9	203
10h00-10h15	63	3	66	83	2	85
10h15-10h30	52	1	53	60	1	61
10h30-10h45	48	1	49	72	4	76
10h45-11h00	40	2	42	61	3	64
TOTAL:	203	7	210	276	10	286
11h00-11h15	29	1	30	60	-	60
11h15-11h30	52	3	55	46	3	49
11h30-11h45	37	4	41	38	-	38
11h45-12h00	44	2	46	47	-	47
TOTAL:	162	10	172	191	3	194
12h00-12h15	45	1	46	76	1	77
12h15-12h30	40	-	40	45	1	46
12h30-12h45	57	1	58	57	-	57
12h45-13h00	48	-	48	41	2	43
TOTAL:	190	2	192	219	4	223
GRAND TOTAL:	800	29	829	1079	36	1115

TOTAL NUMBER OF CARS: 1879

TOTAL NUMBER OF TRUCKS: 65

TOTAL NUMBER OF VEHICLES: 1944

TABLE 1b (contd.)

c/o Sixth / Village streets Position: 2

	FROM C.B.D.			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h15	22	3	25	47	8	55
08h15-08h30	27	11	38	39	11	50
08h30-08h45	14	9	23	20	10	30
08h45-09h00	20	6	26	21	7	28
TOTAL:	83	29	112	127	36	163
09h00-09h15	17	4	21	17	5	22
09h15-09h30	14	8	22	20	6	26
09h30-09h45	20	9	29	27	3	30
09h45-10h00	15	8	23	26	10	36
TOTAL:	66	29	95	90	24	114
10h00-10h15	23	4	27	25	1	26
10h15-10h30	20	7	27	30	6	36
10h30-10h45	22	7	29	38	8	46
10h45-11h00	15	11	26	40	3	43
TOTAL:	80	29	109	133	18	151
11h00-11h15	15	3	18	35	5	40
11h15-11h30	15	5	20	35	3	38
11h30-11h45	15	3	18	30	2	32
11h45-12h00	25	7	32	30	1	31
TOTAL:	70	18	88	130	11	141
12h00-12h15	20	4	24	30	4	34
12h15-12h30	22	3	25	35	5	40
12h30-12h45	20	4	24	35	6	41
12h45-13h00	52	8	60	62	2	64
TOTAL:	114	19	133	162	17	179
GRAND TOTAL:	413	124	537	642	106	748

TOTAL NUMBER OF CARS: 1055

TOTAL NUMBER OF TRUCKS: 230

TOTAL NUMBER OF VEHICLES: 1285

TABLE 1b (contd.)

c/o Seventh / Village streets — Position: 3

	FROM C.B.D.			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h15	11	2	13	13	1	14
08h15-08h30	25	2	27	34	3	37
08h30-08h45	16	-	16	15	1	16
08h45-09h00	28	2	30	17	1	18
TOTAL:	80	6	86	79	6	85
09h00-09h15	14	1	15	17	1	18
09h15-09h30	23	1	24	24	1	25
09h30-09h45	26	-	26	27	-	27
09h45-10h00	26	-	26	27	2	29
TOTAL:	89	2	91	95	4	99
10h00-10h15	30	1	31	28	1	29
10h15-10h30	26	-	26	11	-	11
10h30-10h45	32	-	32	15	-	15
10h45-11h00	24	1	25	11	1	12
TOTAL:	112	2	114	65	2	67
11h00-11h15	37	-	37	19	-	19
11h15-11h30	18	-	18	11	-	11
11h30-11h45	19	-	19	12	-	12
11h45-12h00	25	-	25	7	-	7
TOTAL:	99	-	99	49	-	49
12h00-12h15	25	-	25	5	-	5
12h15-12h30	27	1	28	8	1	9
12h30-12h45	35	-	35	12	-	12
12h45-13h00	17	1	18	6	1	7
TOTAL:	104	2	106	31	2	33
GRAND TOTAL:	484	12	496	319	14	333

TOTAL NUMBER OF CARS: 803

TOTAL NUMBER OF TRUCKS: 26

TOTAL NUMBER OF VEHICLES: 829

TABLE 1b (contd.)

c/o Eighth / Village streets Position: 4

	FROM C.B.D.			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h15	4	-	4	9	1	10
08h15-08h30	5	1	6	8	5	13
08h30-08h45	10	1	11	18	-	18
08h45-09h00	12	-	12	18	-	18
TOTAL:	31	2	33	53	6	59
09h00-09h15	10	-	10	30	-	30
09h15-09h30	20	-	20	25	2	27
09h30-09h45	11	-	11	24	-	24
09h45-10h00	25	-	25	25	3	28
TOTAL:	66	-	66	104	5	109
10h00-10h15	18	1	19	19	4	23
10h15-10h30	16	-	16	24	2	26
10h30-10h45	12	2	14	21	4	25
10h45-11h00	19	1	20	25	-	25
TOTAL:	65	4	69	89	10	99
11h00-11h15	8	-	8	21	1	22
11h15-11h30	20	2	22	29	6	35
11h30-11h45	11	-	11	29	2	31
11h45-12h00	25	1	26	25	1	26
TOTAL:	64	3	67	104	10	114
12h00-12h15	24	1	25	35	1	36
12h15-12h30	9	-	9	22	4	26
12h30-12h45	8	-	8	40	-	40
12h45-13h00	6	-	6	17	-	17
TOTAL:	47	1	48	114	5	119
GRAND TOTAL:	273	10	283	464	36	500

TOTAL NUMBER OF CARS: 737

TOTAL NUMBER OF TRUCKS: 46

TOTAL NUMBER OF VEHICLES: 783

TABLE 1b (contd.)

Main Road - North

Position: 5

	FROM C.B.D.			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h15	40	10	50	65	14	79
08h15-08h30	43	3	46	78	12	90
08h30-08h45	94	12	106	148	7	155
08h45-09h00	107	4	111	125	3	128
TOTAL:	284	29	313	416	36	452
09h00-09h15	47	3	50	115	8	123
09h15-09h30	70	2	72	138	3	141
09h30-09h45	74	3	77	144	2	146
09h45-10h00	80	1	81	142	6	148
TOTAL:	271	9	280	539	19	558
10h00-10h15	92	2	94	110	2	112
10h15-10h30	78	1	79	120	8	128
10h30-10h45	142	2	144	85	2	87
10h45-11h00	64	1	65	132	5	137
TOTAL:	376	6	382	447	17	464
11h00-11h15	108	-	108	137	9	146
11h15-11h30	93	1	94	112	3	115
11h30-11h45	74	-	74	102	7	109
11h45-12h00	60	-	60	105	3	108
TOTAL:	335	1	336	456	22	478
12h00-12h15	98	2	100	83	2	85
12h15-12h30	88	2	90	75	3	78
12h30-12h45	86	5	91	90	3	93
12h45-13h00	91	1	92	81	2	83
TOTAL:	363	10	373	329	10	339
GRAND TOTAL:	1629	55	1684	2187	104	2291

TOTAL NUMBER OF CARS: 3816

TOTAL NUMBER OF TRUCKS: 159

TOTAL NUMBER OF VEHICLES: 3975

TABLE 1b (contd.)

c/o Edwin / Main Roads — Position: 6

	FROM C.B.D.			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h15	5	-	5	5	-	5
08h15-08h30	3	1	4	6	3	9
08h30-08h45	6	-	6	9	1	10
08h45-09h00	10	-	10	5	-	5
TOTAL:	24	1	25	25	4	29
09h00-09h15	14	-	14	12	-	12
09h15-09h30	12	-	12	13	-	13
09h30-09h45	17	1	18	16	2	18
09h45-10h00	16	1	17	24	-	24
TOTAL:	59	2	61	65	2	67
10h00-10h15	18	-	18	26	1	27
10h15-10h30	16	1	17	21	-	21
10h30-10h45	10	1	11	24	1	25
10h45-11h00	14	1	15	22	-	22
TOTAL:	58	3	61	93	2	95
11h00-11h15	13	-	13	19	-	19
11h15-11h30	14	1	15	27	1	28
11h30-11h45	9	1	10	14	-	14
11h45-12h00	11	-	11	16	2	18
TOTAL:	47	2	49	76	3	79
12h00-12h15	8	-	8	11	1	12
12h15-12h30	5	-	5	9	1	10
12h30-12h45	6	-	6	8	-	8
12h45-13h00	5	-	5	6	-	6
TOTAL:	24	-	24	34	2	36
GRAND TOTAL:	212	8	220	293	13	306

TOTAL NUMBER OF CARS: 505

TOTAL NUMBER OF TRUCKS: 21

TOTAL NUMBER OF VEHICLES: 526

TABLE 1b (contd.)

c/o Duncan / San Remo Roads Position: 7

	FROM C.B.D.			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h15	24	1	25	20	1	21
08h15-08h30	11	1	12	23	1	24
08h30-08h45	6	-	6	9	-	9
08h45-09h00	16	-	16	12	-	12
TOTAL:	57	2	59	64	2	66
09h00-09h15	11	-	11	17	1	18
09h15-09h30	16	-	16	21	-	21
09h30-09h45	13	-	13	29	-	29
09h45-10h00	31	-	31	28	-	28
TOTAL	71	-	71	95	1	96
10h00-10h15	17	1	18	29	1	30
10h15-10h30	11	1	12	36	-	36
10h30-10h45	27	-	27	40	-	40
10h45-11h00	20	1	21	25	-	25
TOTAL:	75	3	78	130	1	131
11h00-11h15	24	2	26	36	1	37
11h15-11h30	13	1	14	44	-	44
11h30-11h45	20	-	20	33	-	33
11h45-12h00	16	-	16	30	-	30
TOTAL:	73	3	76	143	1	144
12h00-12h15	21	-	21	29	2	31
12h15-12h30	12	1	13	29	1	30
12h30-12h45	21	-	21	27	-	27
12h45-13h00	10	-	10	19	-	19
TOTAL:	64	1	65	104	3	107
GRAND TOTAL:	340	9	349	536	8	544

TOTAL NUMBER OF CARS: 876

TOTAL NUMBER OF TRUCKS: 17

TOTAL NUMBER OF VEHICLES: 893

TABLE 1b (contd.)

c/o San Remo / Duncan roads Position: 8

	FROM C.B.D.		
TIME	CARS	TRUCKS	TOTAL
08h00-08h15	14	-	14
08h15-08h30	10	1	11
08h30-08h45	21	-	21
08h45-09h00	25	2	27
TOTAL:	70	3	73
09h00-09h15	25	-	25
09h15-09h30	42	-	42
09h30-09h45	53	1	54
09h45-10h00	52	2	54
TOTAL:	172	3	175
10h00-10h15	48	1	49
10h15-10h30	37	-	37
10h30-10h45	27	-	27
10h45-11h00	37	-	37
TOTAL:	149	1	150
11h00-11h15	42	1	43
11h15-11h30	35	-	35
11h30-11h45	36	1	37
11h45-12h00	28	-	28
TOTAL:	141	2	143
12h00-12h15	27	3	30
12h15-12h30	23	-	23
12h30-12h45	13	-	13
12h45-13h00	3	1	4
TOTAL:	66	4	70
GRAND TOTAL:	598	13	611

TOTAL NUMBER OF CARS: 598

TOTAL NUMBER OF TRUCKS: 13

TOTAL NUMBER OF VEHICLES: 611

TABLE 1b (contd.)

c/o Cecil / Main roads Position: 9

	FROM C.B.D.			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h15	44	4	48	68	4	72
08h15-08h30	71	4	75	93	8	101
08h30-08h45	49	5	54	63	3	66
08h45-09h00	53	3	56	53	4	57
TOTAL:	217	16	233	277	19	296
09h00-09h15	53	1	54	77	2	79
09h15-09h30	58	3	61	88	2	90
09h30-09h45	63	2	65	59	6	65
09h45-10h00	54	3	57	83	-	83
TOTAL:	228	9	237	307	10	317
10h00-10h15	58	3	61	67	2	69
10h15-10h30	65	1	66	67	1	68
10h30-10h45	48	3	51	78	1	79
10h45-11h00	48	2	50	78	6	84
TOTAL:	219	9	228	290	10	300
11h00-11h15	53	2	55	82	2	84
11h15-11h30	57	3	60	108	2	110
11h30-11h45	52	2	54	67	3	70
11h45-12h00	61	3	64	82	4	86
TOTAL:	223	10	233	339	11	350
12h00-12h15	62	2	64	82	2	84
12h15-12h30	67	2	69	108	2	110
12h30-12h45	92	1	93	107	3	110
12h45-13h00	83	3	86	95	1	96
TOTAL:	304	8	312	392	8	400
GRAND TOTAL:	1191	52	1243	1605	58	1663

TOTAL NUMBER OF CARS: 2796

TOTAL NUMBER OF TRUCKS: 110

TOTAL NUMBER OF VEHICLES: 2906

TABLE 1b (contd.)

Main Reef Road - South Position: 10

	FROM C.B.D.			TO C.B.D.		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h15	55	8	63	73	15	88
08h15-08h30	23	5	28	41	3	44
08h30-08h45	47	13	60	60	19	79
08h45-09h00	53	18	71	51	15	66
TOTAL:	178	44	222	225	52	277
09h00-09h15	99	28	127	69	22	91
09h15-09h30	86	33	119	61	35	96
09h30-09h45	107	29	136	71	33	104
09h45-10h00	138	38	176	108	67	175
TOTAL:	430	128	558	309	157	466
10h00-10h15	135	48	183	143	81	224
10h15-10h30	80	25	105	80	37	117
10h30-10h45	89	40	129	78	19	97
10h45-11h00	87	27	114	87	32	119
TOTAL:	391	140	531	388	169	557
11h00-11h15	124	28	152	75	27	102
11h15-11h30	82	13	95	78	16	94
11h30-11h45	93	31	124	93	31	124
11h45-12h00	76	13	99	76	17	93
TOTAL:	375	85	470	322	91	413
12h00-12h15	101	13	114	117	23	140
12h15-12h30	76	28	104	77	17	94
12h30-12h45	76	12	88	77	17	94
12h45-13h00	53	24	77	58	22	80
TOTAL:	306	77	383	329	79	408
GRAND TOTAL:	1680	474	2154	1573	548	2121

TOTAL NUMBER OF CARS: 3253

TOTAL NUMBER OF TRUCKS: 1022

TOTAL NUMBER OF VEHICLES: 4275

TABLE 2

TABLES SHOWING VEHICLE COUNTS AT MAIN INTERSECTIONS

(Refer to figure 18 for the location of the counting positions).

c/o Main / Duncan / Sixth streets -M1 - Tuesday 26/9/72

TIME	Sixth Street(A)		Main Road(B)		Duncan Road(C)		Main Road(D)	
	E-W	W-E	N-S	S-N	E-W	W-E	N-S	S-N
07h00-07h15	7	33	40	25	2	7	22	38
07h15-07h30	20	26	63	30	3	6	55	62
07h30-07h45	19	43	57	29	1	4	44	48
07h45-08h00	27	33	64	48	2	8	52	63
08h00-08h15	29	35	72	65	1	6	58	66
08h15-08h30	28	39	76	67	3	3	57	68
TOTAL:	130	209	372	264	12	34	288	345
12h30-12h45	58	45	82	102	28	11	92	84
12h45-13h00	51	32	89	88	32	18	90	127
13h00-13h15	95	35	88	77	17	10	57	67
13h15-13h30	48	35	78	60	16	8	54	75
13h30-13h45	25	42	87	60	10	7	75	79
13h45-14h00	33	52	82	80	16	16	65	80
TOTAL:	310	241	506	467	119	70	433	512
15h00-15h15	21	29	41	47	7	11	46	52
15h15-15h30	45	56	70	74	18	18	59	78
15h30-15h45	52	50	78	100	18	19	78	96
15h45-16h00	25	55	118	103	23	19	91	102
TOTAL:	143	190	307	324	66	67	274	328
16h00-16h15	69	48	116	107	18	23	90	109
16h15-16h30	77	30	86	90	33	14	73	110
16h30-16h45	74	50	121	113	30	30	107	150
16h45-17h00	62	53	101	96	26	18	75	99
17h00-17h15	107	67	112	127	40	15	98	180
17h15-17h30	67	51	87	73	10	10	62	87
TOTAL:	456	299	623	606	157	110	505	735
DAY TOTAL:	1039	939	1808	1661	354	281	1500	1920
BOTH DIRECTIONS	1978		3469		635		3420	

TOTAL FOR INTERSECTION: 9502

TABLE 2 (contd.)

c/o Main / First streets – M2 – Tuesday 26/9/72

TIME	First Street(A)		Main Road(B)		First Street(C)		Main Road(D)	
	E-W	W-E	N-S	S-N	E-W	W-E	N-S	S-N
07h00-07h15	19	1	47	57	-	1	57	48
07h15-07h30	10	7	62	67	-	-	65	60
07h30-07h45	12	8	84	73	1	-	90	67
07h45-08h00	15	12	62	79	3	2	71	73
08h00-08h15	11	16	62	87	-	1	68	63
08h15-08h30	13	9	72	70	4	1	78	74
TOTAL:	80	53	389	433	8	5	429	385
12h30-12h45	17	20	73	68	2	2	90	48
12h45-13h00	13	9	62	55	1	1	68	46
13h00-13h15	15	18	66	58	1	4	78	40
13h15-13h30	9	9	52	59	2	2	58	50
13h30-13h45	8	12	37	67	1	1	45	55
13h45-14h00	5	9	68	49	2	4	74	40
TOTAL:	67	77	358	356	9	14	413	279
15h00-15h15	6	5	36	47	1	2	31	47
15h15-15h30	6	7	51	76	3	2	46	76
15h30-15h45	12	19	63	76	2	-	55	75
15h45-16h00	23	12	75	95	3	3	71	84
TOTAL:	47	43	225	294	9	7	203	282
16h00-16h15	7	22	57	110	1	4	75	106
16h15-16h30	11	15	55	119	4	2	66	115
16h30-16h45	13	34	61	130	4	6	90	125
16h45-17h00	17	12	93	102	4	6	100	97
17h00-17h15	7	15	95	117	4	4	105	113
17h15-17h30	13	12	83	87	2	8	90	83
TOTAL:	68	110	444	665	19	30	526	639
DAY TOTAL:	262	283	1416	1748	45	56	1571	1585
BOTH DIRECTIONS: 545			3164		101		3156	

TOTAL FOR INTERSECTION: 6966

TABLE 2 (contd.)

c/o Lazar / Union streets — M3 - Tuesday 26/9/72

TIME	Lazar Street (A)		Union Street (B)		Lazar Street (C)	
	E-W	W-E	N-S	S-N	E-W	W-E
07h00-07h15	19	50	13	8	18	71
07h15-07h30	12	52	12	6	17	60
07h30-07h45	24	60	27	8	30	77
07h45-08h00	16	56	27	11	25	75
08h00-08h15	19	37	22	11	30	51
08h15-08h30	16	39	11	12	29	47
TOTAL:	106	294	112	56	149	381
12h30-12h45	23	23	23	29	47	25
12h45-13h00	27	22	16	26	53	25
13h00-13h15	58	28	16	29	75	28
13h15-13h30	35	40	18	26	50	43
13h30-13h45	20	23	14	16	40	40
13h45-14h00	25	58	25	16	42	66
TOTAL:	188	194	112	142	307	227
15h00-15h15	21	34	24	27	47	45
15h15-15h30	35	41	13	33	65	42
15h30-15h45	42	34	19	29	70	37
15h45-16h00	36	32	16	30	60	40
TOTAL:	134	141	72	119	242	164
16h30-16h45	37	33	19	112	85	43
16h45-17h00	57	40	30	137	80	50
17h00-17h15	85	28	20	178	150	41
17h15-17h30	55	45	16	151	90	47
TOTAL:	234	146	85	578	405	181
DAY TOTAL:	662	775	381	895	1103	953
BOTH DIRECTIONS:	1437		1276		2056	

TOTAL FOR INTERSECTION: 4769

TABLE 2 (contd.)

Cross-roads north of town - M4 - Tuesday 26/9/72

(Randfontein-Krugersdorp/Bridge-Roodepoort)

	Bridge (A)	To Krugers-dorp(B)	To Roode-poort (C)	To Randfon-tein(D)
TIME	E-W	S-N	W-E	N-S
07h00-07h15	18	22	44	42
07h15-07h30	22	88	56	64
07h30-07h45	22	96	60	75
07h45-08h00	21	91	35	93
08h00-08h15	15	67	34	93
08h15-08h30	32	58	31	61
TOTAL:	130	422	260	428
12h30-12h45	21	48	38	62
12h45-13h00	36	55	30	60
13h00-13h15	22	37	32	57
13h15-13h30	31	63	34	68
13h30-13h45	18	58	30	67
13h45-14h00	28	81	29	70
TOTAL:	156	342	193	384
15h00-15h15	23	79	56	49
15h15-15h30	38	62	21	57
15h30-15h45	30	76	49	79
15h45-16h00	26	55	29	54
TOTAL:	117	272	155	239
16h30-16h45	48	61	48	94
16h45-17h00	57	41	55	94
17h00-17h15	100	104	49	128
17h15-17h30	68	64	35	95
17h30-17h45	64	62	32	94
17h45-18h00	58	51	30	80
TOTAL:	405	383	249	585
DAY TOTAL:	808	1419	857	1636

TOTAL FOR INTERSECTION: 4720

TABLE 2 (contd.)

c/o Main/ Duncan/ Sixth streets - M1 - Saturday 30/9/72

	Sixth Street (A)		Main Road (B)		Duncan Road (C)		Main Road (D)	
TIME	E-W	W-E	N-S	S-N	E-W	W-E	N-S	S-N
07h30-07h45	25	23	42	32	6	5	38	29
07h45-08h00	30	68	47	85	8	19	47	85
08h00-08h15	36	59	65	70	15	30	66	80
08h15-08h30	45	86	92	85	11	33	102	122
08h30-08h45	50	90	96	78	13	39	94	96
08h45-09h00	52	96	103	90	12	42	112	118
TOTAL:	238	422	445	440	65	168	459	530
12h30-12h45	95	55	157	100	42	30	110	100
12h45-13h00	76	50	150	125	40	30	92	110
13h00-13h15	90	38	122	92	53	12	84	111
13h15-13h30	68	21	77	85	22	4	63	110
TOTAL:	329	164	506	402	157	76	349	431
DAY TOTAL:	567	586	951	842	222	244	808	961
BOTH DIRECTIONS:	1153		1793		466		1769	

TOTAL FOR INTERSECTION: 5181

TABLE 2 (contd.)

c/o Main/ First streets - M2 - Saturday 30/9/72

	First Street (A)		Main Road (B)		First street (C)		Main Road (D)	
TIME	E-W	W-E	N-S	S-N	E-W	W-E	N-S	S-N
07h30-07h45	7	15	75	72	3	2	80	76
07h45-08h00	4	17	46	99	2	2	52	89
08h00-08h15	6	19	67	93	4	-	72	91
08h15-08h30	11	19	86	102	3	2	90	98
08h30-08h45	7	18	65	101	1	1	60	125
08h45-09h00	8	15	70	93	4	8	67	105
TOTAL:	43	103	409	560	17	15	421	584
12h30-12h45	10	12	119	81	2	8	70	116
12h45-13h00	10	14	121	105	5	4	104	119
13h00-13h15	9	11	110	79	4	5	89	108
13h15-13h30	11	15	87	113	7	3	103	91
TOTAL:	40	52	437	378	18	20	366	434
DAY TOTAL:	83	155	846	938	35	35	787	1018
BOTH DIRECTIONS:	238		1784		70		1805	

TOTAL FOR INTERSECTION: 3897

TABLE 2 (contd.)

c/o Lazar / Union streets - M3 - Saturday 30/9/72

	Lazar St. (A)		Union St. (B)		Lazar St. (C)	
TIME	E-W	W-E	N-S	S-N	E-W	W-E
07h30-07h45	27	42	15	24	45	50
07h45-08h00	21	65	28	27	31	65
08h00-08h15	29	55	19	26	57	54
08h15-08h30	23	56	32	24	55	71
08h30-08h45	24	54	32	28	49	72
08h45-09h00	32	106	33	36	67	93
TOTAL:	156	378	159	165	304	405
12h30-12h45	59	52	32	56	104	60
12h45-13h00	42	42	38	51	93	43
13h00-13h15	48	41	38	47	100	67
13h15-13h30	54	32	26	30	76	47
TOTAL:	203	167	134	184	373	217
DAY TOTAL:	359	545	293	349	677	622
BOTH DIRECTIONS:	904		642		1299	

TOTAL FOR INTERSECTION: 2845

TABLE 2 (contd.)

Cross-roads north of town - M4 - Saturday 30/9/72

(Randfontein-Krugersdorp/Bridge-Roodepoort)

	Bridge (A)		To Krugersdorp (B)		To Roodepoort (C)		To Randfontein (D)	
TIME	E-W	W-E	N-S	S-N	E-W	W-E	N-S	S-N
07h00-07h15	21	21	65	25	25	22	65	30
07h15-07h30	15	30	33	32	19	24	32	26
07h30-07h45	31	42	62	47	26	33	57	52
07h45-08h00	20	61	64	57	35	50	55	59
08h00-08h15	18	51	71	58	35	29	61	52
08h15-08h30	38	51	80	57	50	41	70	71
08h30-08h45	33	44	75	64	44	30	70	68
08h45-09h00	27	53	93	50	21	39	87	63
TOTAL:	203	353	543	390	255	268	497	421
12h30-12h45	36	39	41	32	28	21	62	39
12h45-13h00	31	25	38	30	31	21	46	34
13h00-13h15	25	27	21	46	32	31	48	52
13h15-13h30	49	42	50	54	52	61	91	66
TOTAL:	141	133	150	162	143	134	247	191
DAY TOTAL:	344	486	693	552	398	402	744	612
BOTH DIRECTIONS:	830		1245		800		1356	

TOTAL FOR INTERSECTION: 4231

TABLE 3

TABLES SHOWING VEHICLE ~~AREA~~ Spot COUNTS

ON SELECTED ROADS

(Refer to figure 18 for the location of the counting positions)

	c/o Stubbs and North of 6th Street -S1		c/o Stubbs and South of Sixth Street -S2	
	Number of Vehicles - Thursday 30/11/72		Number of Vehicles - Thursday 8/12/72	
TIME	N-S	S-N	N-S	S-N
08h00-09h00	9	18	102	240
09h00-10h00	11	13	97	166
10h00-11h00	17	43	73	223
11h00-12h00	14	30	63	242
12h00-13h00	18	34	53	142
13h00-14h00	23	41	79	229
14h00-15h00	29	45	63	232
15h00-16h00	19	29	149	360
16h00-17h00	11	36	87	396
17h00-18h00	49	32	60	309
TOTAL:	200	321	826	2539
BOTH DIRECTIONS:	521		3365	

	c/o Sutherland and West of Stubbs St. -S3		c/o Sutherland and East of Stubbs St. -S4	
	Number of Vehicles - Monday 27/11/72		Number of Vehicles - Tuesday 28/11/72	
TIME	W-E	E-W	W-E	E-W
08h00-09h00	134	44	216	166
09h00-10h00	147	62	208	236
10h00-11h00	87	46	185	230
11h00-12h00	78	67	227	272
12h00-13h00	77	51	179	239
13h00-14h00	64	75	205	273
14h00-15h00	85	79	227	224
15h00-16h00	62	57	334	310
16h00-17h00	101	89	434	306
17h00-18h00	65	78	247	316
TOTAL:	900	644	2462	2572
BOTH DIRECTIONS:	1544		5034	

TABLE 3 (contd.)

	c/o First and South of Fedler St.-S5		c/o Duncan and North of Maugham Rds. -S6	
	Number of Vehicles - Thursday 23/11/72		Number of Vehicles - Friday 1/12/72	
TIME	N-S	S-N	N-S	S-N
08h00-09h00	155	124	273	103
09h00-10h00	173	161	215	109
10h00-11h00	129	104	153	189
11h00-12h00	106	113	134	101
12h00-13h00	129	129	308	283
13h00-14h00	123	130	218	132
14h00-15h00	138	167	248	139
15h00-16h00	124	110	108	89
16h00-17h00	153	148	181	198
17h00-18h00	186	267	122	149
TOTAL:	1416	1449	1960	1492
BOTH DIRECTIONS:	2865		3452	

Cemetry Road Bridge Across Railway - S7

	Number of Vehicles - Monday 4/12/72	
TIME	W-E	E-W
08h00-09h00	119	69
09h00-10h00	109	88
10h00-11h00	104	136
11h00-12h00	53	82
12h00-13h00	112	92
13h00-14h00	169	111
14h00-15h00	175	200
15h00-16h00	117	90
16h00-17h00	67	93
17h00-18h00	213	213
TOTAL:	1238	1174
BOTH DIRECTIONS:	2412	

TABLE 4

TABLES SHOWING VEHICLE ~~CORDON~~ COUNTS ON RESIDENTIAL AREA ROADS

(Refer to figure 18 for the location of the counting positions).

c/o Convent and Akker streets - Greenhills - R1

Wednesday 30/5/73

Count taken WEST of Intersection.

	GOING WEST			GOING EAST		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
07h30-08h00	16	-	16	11	-	11
08h00-08h30	14	-	14	8	2	10
08h30-09h00	18	-	18	5	3	8
09h00-09h30	12	4	16	13	3	16
09h30-10h00	21	4	25	19	2	21
10h00-10h30	13	1	14	7	1	8
10h30-11h00	9	-	9	5	-	5
11h00-11h30	11	-	11	15	2	17
11h30-12h00	16	3	19	13	1	14
12h00-12h30	16	3	19	28	2	30
12h30-13h00	14	-	14	16	1	17
13h00-13h30	30	-	30	52	-	52
13h30-14h00	24	1	25	38	2	40
14h00-14h30	25	-	25	25	2	27
14h30-15h00	14	1	15	16	2	18
15h00-15h30	30	2	32	36	2	38
15h30-16h00	16	3	19	28	1	29
16h00-16h30	13	-	13	17	1	18
16h30-17h00	25	1	26	45	-	45
17h00-17h30	43	1	44	68	-	68
TOTAL:	380	24	404	465	27	492

TOTAL NUMBER OF CARS: 845

TOTAL NUMBER OF TRUCKS: 51

TOTAL NUMBER OF VEHICLES: 896

TABLE 4 (contd.)

c/o Homestead and Kenneth Avenues - Greenhills - R2

Wednesday 30/5/73

Count taken on KENNETH WEST of Intersection.

	GOING WEST			GOING EAST		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
07h30-08h00	11	1	12	27	2	29
08h00-08h30	9	2	11	28	1	29
08h30-09h00	23	10	33	37	7	44
09h00-09h30	22	6	28	50	3	53
09h30-10h00	21	7	28	34	2	36
10h00-10h30	28	5	33	25	2	27
10h30-11h00	22	5	27	28	5	33
11h00-11h30	29	6	35	25	4	29
11h30-12h00	31	5	36	27	4	31
12h00-12h30	19	7	26	24	3	27
12h30-13h00	88	6	94	51	6	57
13h00-13h30	70	6	76	60	5	65
13h30-14h00	34	4	38	78	6	84
14h00-14h30	26	5	31	55	4	59
14h30-15h00	27	8	35	34	4	38
15h00-15h30	45	12	57	49	12	61
15h30-16h00	42	10	52	50	8	58
16h00-16h30	53	6	59	49	7	56
16h30-17h00	68	12	80	44	8	52
17h00-17h30	90	9	99	48	7	55
TOTAL:	758	132	890	823	100	923

TOTAL NUMBER OF CARS: 1581

TOTAL NUMBER OF TRUCKS: 232

TOTAL NUMBER OF VEHICLES: 1813

TABLE 4 (contd.)

c/o Greenhills and Raven Avenues - Greenhills - R3

Tuesday 29/5/73

Count taken on GREENHILLS AVENUE SOUTH of Intersection.

	GOING NORTH			GOING SOUTH		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
07h30-08h00	31	6	37	29	4	33
08h00-08h30	41	10	51	28	4	32
08h30-09h00	25	10	35	22	4	26
09h00-09h30	23	6	29	21	1	22
09h30-10h00	19	4	23	19	5	24
10h00-10h30	30	8	38	15	3	18
10h30-11h00	18	5	23	21	4	25
11h00-11h30	24	7	31	12	5	17
11h30-12h00	20	2	22	17	6	23
12h00-12h30	17	7	24	12	12	24
12h30-13h00	20	6	26	20	6	26
13h00-13h30	30	4	34	7	1	8
13h30-14h00	21	3	24	12	8	20
14h00-14h30	19	3	22	14	1	15
14h30-15h00	24	12	36	20	10	30
15h00-15h30	33	4	37	22	4	26
15h30-16h00	22	1	23	17	5	22
16h00-16h30	22	2	24	17	8	25
16h30-17h00	21	-	21	16	7	23
17h00-17h30	22	-	22	14	2	16
TOTAL:	482	102	584	355	100	455

TOTAL NUMBER OF CARS: 837

TOTAL NUMBER OF TRUCKS: 202

TOTAL NUMBER OF VEHICLES: 1039

TABLE 4 (contd.)

c/o Northway and Homestead Avenues - Greenhills - R4

Wednesday 30/5/73

Count taken on NORTHWAY WEST of Intersection.

	GOING WEST			GOING EAST		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
07h30-08h00	14	1	15	13	2	15
08h00-08h30	14	3	17	14	1	15
08h30-09h00	16	2	18	16	3	19
09h00-09h30	13	6	19	12	6	18
09h30-10h00	18	5	23	13	2	15
10h00-10h30	19	6	25	13	6	19
10h30-11h00	20	4	24	16	7	23
11h00-11h30	21	2	23	13	6	19
11h30-12h00	17	10	27	15	6	21
12h00-12h30	18	7	25	18	6	24
12h30-13h00	16	5	21	6	4	10
13h00-13h30	15	5	20	11	3	14
13h30-14h00	14	4	18	16	2	18
14h00-14h30	14	1	15	10	1	11
14h30-15h00	13	3	16	12	5	17
15h00-15h30	13	4	17	12	5	17
15h30-16h00	14	5	19	12	3	15
16h00-16h30	8	5	13	7	4	11
16h30-17h00	19	12	31	21	10	31
17h00-17h30	14	10	24	16	6	22
TOTAL:	310	100	410	266	88	354

TOTAL NUMBER OF CARS: 576

TOTAL NUMBER OF TRUCKS: 188

TOTAL NUMBER OF VEHICLES: 764

TABLE 4 (contd.)

Sixth street bridge across railway - Homelake - R5

Count taken on BRIDGE.

	NUMBER OF VEHICLES FRIDAY 24/11/72		NUMBER OF VEHICLES SATURDAY 25/11/72	
TIME	GOING EAST	GOING WEST	GOING EAST	GOING WEST
08h00-09h00	434	143	649	317
09h00-10h00	336	249	611	379
10h00-11h00	305	275	729	672
11h00-12h00	124	206	559	486
12h00-13h00	324	316	526	586
13h00-14h00	535	540	370	469
14h00-15h00	432	436	343	289
15h00-16h00	471	477	260	247
16h00-17h00	741	506	292	293
17h00-18h00	338	758	226	254
TOTAL:	4040	3906	4565	3992
BOTH DIRECTIONS:	7946		8557	

TABLE 4 (contd.)

c/o Tambotie Ext. and Malan streets - Randgate - R6

Monday 28/5/73

Count taken on Tambotie Ext. - EAST of Intersection.

	GOING WEST			GOING EAST		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
07h30-08h00	50	16	66	126	14	140
08h00-08h30	56	17	73	122	14	136
08h30-09h00	44	13	57	94	11	105
09h00-09h30	62	13	75	70	20	90
09h30-10h00	55	14	69	70	10	80
10h00-10h30	75	22	97	78	11	89
10h30-11h00	61	17	78	64	20	84
11h00-11h30	79	26	105	75	15	90
11h30-12h00	83	24	107	71	14	85
12h00-12h30	97	14	111	85	17	102
12h30-13h00	55	20	75	91	27	118
13h00-13h30	68	24	92	134	19	153
13h30-14h00	100	15	115	102	25	127
14h00-14h30	102	28	130	108	26	134
14h30-15h00	73	20	93	79	22	101
15h00-15h30	71	24	95	92	21	113
15h30-16h00	80	18	98	83	25	108
16h00-16h30	89	24	113	158	23	181
16h30-17h00	80	19	99	152	16	168
17h00-17h30	88	10	98	272	8	280
TOTAL:	1468	378	1846	2126	358	2484

TOTAL NUMBER OF CARS: 3594

TOTAL NUMBER OF TRUCKS: 736

TOTAL NUMBER OF VEHICLES: 4330

TABLE 5

TABLES SHOWING VEHICLE COUNTS ON ROADS ENTERING MUNICIPAL BOUNDARY

(Refer to figure 18 for the location of the counting positions).

Cross-roads north of town - P1 Monday 4/6/73
(Randfontein-Krugersdorp/Bridge-Roodepoort)

Count taken NORTH of Intersection.

	GOING NORTH			GOING SOUTH		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	75	37	112	80	33	113
08h30-09h00	85	32	117	97	50	147
09h00-09h30	78	39	117	99	29	128
09h30-10h00	95	34	129	117	41	158
10h00-10h30	104	35	139	98	14	112
10h30-11h00	133	41	174	144	27	171
11h00-11h30	138	33	171	149	22	171
11h30-12h00	138	40	178	136	33	169
12h00-12h30	153	39	192	127	31	158
12h30-13h00	147	25	172	122	24	146
13h00-13h30	161	25	186	106	15	121
13h30-14h00	162	45	207	115	33	148
14h00-14h30	121	21	142	84	29	113
14h30-15h00	149	39	188	98	40	138
15h00-15h30	151	46	197	94	30	124
15h30-16h00	128	38	166	90	33	123
16h00-16h30	146	43	189	91	33	124
16h30-17h00	118	30	148	92	20	112
17h00-17h30	112	27	139	90	21	111
TOTAL:	2394	669	3063	2029	558	2587

TOTAL NUMBER OF CARS: 4423
TOTAL NUMBER OF TRUCKS: 1227
TOTAL NUMBER OF VEHICLES: 5650

TABLE 5 (contd.)

Cross-roads north of town - P2 Monday 4/6/73
(Randfontein-Krugersdorp/Bridge-Roodepoort)
Count taken EAST of Intersection.

	GOING WEST			GOING EAST		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	52	66	118	67	20	87
08h30-09h00	74	25	99	74	47	121
09h00-09h30	100	36	136	102	50	152
09h30-10h00	81	29	110	79	32	111
10h00-10h30	154	31	185	154	32	186
10h30-11h00	103	22	125	123	32	155
11h00-11h30	95	18	113	99	27	126
11h30-12h00	60	13	73	86	19	105
12h00-12h30	37	25	62	42	24	66
12h30-13h00	33	20	53	40	26	66
13h00-13h30	37	15	52	52	20	72
13h30-14h00	50	20	70	99	30	129
14h00-14h30	28	30	58	51	23	74
14h30-15h00	56	36	92	68	36	104
15h00-15h30	54	46	100	75	50	125
15h30-16h00	54	33	87	56	38	94
16h00-16h30	51	18	69	78	41	119
16h30-17h00	77	15	92	73	27	100
17h00-17h30	86	15	101	68	18	86
TOTAL:	1282	513	1795	1486	592	2078

TOTAL NUMBER OF CARS: 2768
TOTAL NUMBER OF TRUCKS: 1105
TOTAL NUMBER OF VEHICLES: 3873

TABLE 5 (contd.)

Cross-roads Zuurbekom/Mohlakeng - P3 Monday 4/6/73

Count taken EAST of Intersection.

	GOING WEST			GOING EAST		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	23	5	28	23	6	29
08h30-09h00	31	8	39	31	8	39
09h00-09h30	41	3	44	34	12	46
09h30-10h00	25	11	36	35	28	63
10h00-10h30	12	9	21	32	14	46
10h30-11h00	19	16	35	35	19	54
11h00-11h30	24	14	38	41	18	59
11h30-12h00	26	16	42	30	17	47
12h00-12h30	23	10	33	28	18	46
12h30-13h00	44	17	61	30	25	55
13h00-13h30	30	16	46	31	22	53
13h30-14h00	21	9	30	32	23	55
14h00-14h30	22	12	34	44	26	70
14h30-15h00	43	20	63	52	25	77
15h00-15h30	23	15	38	47	25	72
15h30-16h00	40	12	52	39	30	69
16h00-16h30	39	30	69	65	30	95
16h30-17h00	42	24	66	67	29	96
17h00-17h30	17	9	26	53	15	68
TOTAL	545	256	801	749	390	1139

TOTAL NUMBER OF CARS: 1294

TOTAL NUMBER OF TRUCKS: 646

TOTAL NUMBER OF VEHICLES: 1940

TABLE 5 (contd.)

Cross-roads Randfontein-Westonaria/Finsbury-Zuurbekom - P4 Wednesday 6/6/73

Count taken SOUTH of Intersection

	GOING NORTH			GOING SOUTH		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	46	12	58	28	13	41
08h30-09h00	62	15	77	49	20	69
09h00-09h30	66	18	84	57	23	80
09h30-10h00	75	15	90	59	31	90
10h00-10h30	53	10	63	55	12	67
10h30-11h00	43	15	58	65	26	91
11h00-11h30	41	23	64	71	25	96
11h30-12h00	63	21	84	73	21	94
12h00-12h30	63	25	88	64	28	92
12h30-13h00	82	40	122	87	44	131
13h00-13h30	46	26	72	64	28	92
13h30-14h00	45	35	80	55	22	77
14h00-14h30	79	24	103	62	35	97
14h30-15h00	97	28	125	62	25	87
15h00-15h30	96	27	123	56	30	86
15h30-16h00	115	36	151	51	21	72
16h00-16h30	136	42	178	87	32	119
16h30-17h00	98	24	122	80	21	101
17h00-17h30	51	22	73	65	25	90
TOTAL	1357	458	1815	1190	482	1672

TOTAL NUMBER OF CARS: 2547

TOTAL NUMBER OF TRUCKS: 940

TOTAL NUMBER OF VEHICLES: 3487

TABLE 5 (contd.)

Cross-roads in Koksoord - P5 Tuesday 5/6/73
(Randfontein-Hillside/Road to School)
Count taken SOUTH of Intersection.

	GOING NORTH			GOING SOUTH		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	26	3	29	15	2	17
08h30-09h00	31	3	34	27	3	30
09h00-09h30	28	2	30	24	2	26
09h30-10h00	21	4	25	28	2	30
10h00-10h30	33	1	34	35	1	36
10h30-11h00	26	1	27	23	5	28
11h00-11h30	18	2	20	24	1	25
11h30-12h00	20	1	21	17	2	19
12h00-12h30	22	4	26	27	3	30
12h30-13h00	12	1	13	24	2	26
13h00-13h30	24	1	25	42	3	45
13h30-14h00	26	4	30	22	4	26
14h00-14h30	20	5	25	29	9	38
14h30-15h00	21	5	26	27	3	30
15h00-15h30	24	2	26	22	6	28
15h30-16h00	24	3	27	29	5	34
16h00-16h30	43	4	47	51	4	55
16h30-17h00	36	2	38	51	2	53
17h00-17h30	30	3	33	48	6	54
TOTAL:	485	51	536	565	65	630

TOTAL NUMBER OF CARS: 1050
TOTAL NUMBER OF TRUCKS: 116
TOTAL NUMBER OF VEHICLES: 1166

TABLE 5 (contd.)

Cross-roads in Wheatlands - P6 Tuesday 5/6/73
(Randfontein-Rodora/Wheatlands School Road)
Count taken WEST of Intersection

	GOING WEST			GOING EAST		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	6	2	8	4	1	5
08h30-09h00	9	1	10	14	3	17
09h00-09h30	4	1	5	9	-	9
09h30-10h00	10	4	14	18	3	21
10h00-10h30	21	2	23	14	4	18
10h30-11h00	18	5	23	8	4	12
11h00-11h30	13	3	16	9	5	14
11h30-12h00	19	7	26	15	3	18
12h00-12h30	21	6	27	12	2	14
12h30-13h00	10	4	14	6	1	7
13h00-13h30	12	1	13	11	2	13
13h30-14h00	9	2	11	8	7	15
14h00-14h30	13	5	18	12	2	14
14h30-15h00	28	1	29	10	9	19
15h00-15h30	17	4	21	17	4	21
15h30-16h00	45	7	52	29	5	34
16h00-16h30	27	7	34	29	6	35
16h30-17h00	24	2	26	27	4	31
17h00-17h30	20	5	25	18	6	24
TOTAL:	326	69	395	270	71	341

TOTAL NUMBER OF CARS: 596
TOTAL NUMBER OF TRUCKS: 140
TOTAL NUMBER OF VEHICLES: 736

TABLE 5 (contd.)

Ventersdorp road from Randgate - P7 Tuesday 29/5/73

	GOING NORTH			GOING SOUTH		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	8	4	12	9	3	12
08h30-09h00	13	3	16	19	6	25
09h00-09h30	16	7	23	17	1	18
09h30-10h00	18	2	20	21	8	29
10h00-10h30	21	9	30	30	6	36
10h30-11h00	32	6	38	25	7	32
11h00-11h30	16	2	18	10	1	11
11h30-12h00	40	11	51	30	4	34
12h00-12h30	23	7	30	27	5	32
12h30-13h00	19	3	22	26	6	32
13h00-13h30	36	6	42	28	1	29
13h30-14h00	21	6	27	19	5	24
14h00-14h30	23	5	28	20	4	24
14h30-15h00	36	3	39	35	3	38
15h00-15h30	28	3	31	25	4	29
15h30-16h00	34	3	37	21	7	28
16h00-16h30	38	3	41	37	9	46
16h30-17h00	56	8	64	39	9	48
17h00-17h30	72	3	75	21	3	24
TOTAL:	550	94	644	459	92	551

TOTAL NUMBER OF CARS: 1009
TOTAL NUMBER OF TRUCKS: 186
TOTAL NUMBER OF VEHICLES: 1195

TABLE 5 (contd.)

Cross-roads Greenhills-Millsite/Bridge to Main Road -P8

Monday 4/6/73

Count taken NORTH of Intersection.

	GOING NORTH			GOING SOUTH		
TIME	CARS	TRUCKS	TOTAL	CARS	TRUCKS	TOTAL
08h00-08h30	9	6	15	11	6	17
08h30-09h00	11	8	19	16	11	27
09h00-09h30	7	3	10	11	9	20
09h30-10h00	9	2	11	15	7	22
10h00-10h30	9	8	17	12	7	19
10h30-11h00	8	2	10	10	3	13
11h00-11h30	11	2	13	13	4	17
11h30-12h00	9	6	15	13	9	22
12h00-12h30	7	6	13	13	6	19
12h30-13h00	11	2	13	19	6	25
13h00-13h30	12	3	15	10	5	15
13h30-14h00	18	8	26	14	8	22
14h00-14h30	12	8	20	10	5	15
14h30-15h00	9	1	10	9	4	13
15h00-15h30	11	6	17	16	8	24
15h30-16h00	9	6	15	11	2	13
16h00-16h30	22	11	33	9	6	15
16h30-17h00	12	8	20	37	10	47
17h00-17h30	17	5	22	18	6	24
TOTAL:	213	101	314	267	122	389

TOTAL NUMBER OF CARS: 480

TOTAL NUMBER OF TRUCKS: 223

TOTAL NUMBER OF VEHICLES: 703

TABLE 6

TABLES SHOWING PEDESTRIAN COUNTS IN THE C.B.D. ON A WEEKDAY - TUESDAY 27/3/73

(Refer to figure 15 for the location of the counting positions).

c/o Main and Sutherland streets (Side A)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	9	69	78	7	17	24
08h30-09h00	17	60	77	20	25	45
TOTAL:	26	129	155	27	42	69
09h00-09h30	18	67	85	15	46	61
09h30-10h00	23	34	57	21	24	45
TOTAL:	41	101	142	36	70	106
10h00-10h30	18	52	70	16	38	54
10h30-11h00	18	52	70	18	30	48
TOTAL:	36	104	140	34	68	102
11h00-11h30	14	51	65	12	55	67
11h30-12h00	23	54	77	16	59	75
TOTAL:	37	105	142	28	114	142
12h00-12h30	13	56	69	19	55	74
12h30-13h00	22	50	72	10	30	40
TOTAL:	35	106	141	29	85	114
13h00-13h30	12	39	51	11	55	66
13h30-14h00	16	42	58	13	30	43
TOTAL:	28	81	109	24	85	109
14h00-14h30	16	50	66	20	41	61
14h30-15h00	22	38	60	16	48	64
TOTAL:	38	88	126	36	89	125
15h00-15h30	8	29	37	11	48	59
15h30-16h00	22	18	40	16	64	80
TOTAL:	30	47	77	27	112	139
16h00-16h30	35	22	57	21	64	85
16h30-17h00	16	31	47	15	45	60
TOTAL:	51	53	104	36	109	145
GRAND TOTAL	322	814	1136	277	774	1051

TOTAL FOR N. AND S.: 2187

TOTAL AT INTERSECTION: 3647

TABLE 6 (contd.)

c/o Main and Sutherland streets (Side B)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	8	36	44	8	12	20
08h30-09h00	12	22	34	10	12	22
TOTAL:	20	58	78	18	24	42
09h00-09h30	8	27	35	9	24	33
09h30-10h00	10	22	32	9	12	21
TOTAL:	18	49	67	18	36	54
10h00-10h30	10	36	46	18	30	48
10h30-11h00	12	41	53	17	25	42
TOTAL:	22	77	99	35	55	90
11h00-11h30	7	56	63	12	20	32
11h30-12h00	12	72	84	10	37	47
TOTAL:	19	128	147	22	57	79
12h00-12h30	9	44	53	12	48	60
12h30-13h00	17	40	57	4	29	33
TOTAL:	26	84	110	16	77	93
13h00-13h30	12	30	42	9	47	56
13h30-14h00	5	24	29	5	11	16
TOTAL:	17	54	71	14	58	72
14h00-14h30	13	10	23	14	26	40
14h30-15h00	12	5	17	8	39	47
TOTAL:	25	15	40	22	65	87
15h00-15h30	6	9	15	6	34	40
15h30-16h00	11	12	23	5	54	59
TOTAL:	17	21	38	11	88	99
16h00-16h30	11	16	27	24	60	84
16h30-17h00	7	9	16	26	41	67
TOTAL:	18	25	43	50	101	151
GRAND TOTAL:	182	511	693	206	561	767

TOTAL FOR E. AND W.: 1460

TABLE 6 (contd.)

c/o Main and Fifth streets (Side A)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	21	37	58	13	9	22
08h30-09h00	27	50	77	23	15	38
TOTAL:	48	87	135	36	24	60
09h00-09h30	41	77	118	26	42	68
09h30-10h00	54	54	108	33	41	74
TOTAL:	95	131	226	59	83	142
10h00-10h30	27	63	90	36	45	81
10h30-11h00	42	69	111	55	65	120
TOTAL:	69	132	201	91	110	201
11h00-11h30	49	55	104	30	70	100
11h30-12h00	30	97	127	38	36	74
TOTAL:	79	152	231	68	106	174
12h00-12h30	31	95	126	22	51	73
12h30-13h00	41	36	77	17	54	71
TOTAL:	72	131	203	39	105	144
13h00-13h30	13	33	46	19	31	50
13h30-14h00	12	44	56	12	42	54
TOTAL:	25	77	102	31	73	104
14h00-14h30	25	25	50	20	15	35
14h30-15h00	14	54	68	19	47	66
TOTAL:	39	79	118	39	62	101
15h00-15h30	28	46	74	16	62	78
15h30-16h00	28	41	69	25	76	101
TOTAL:	56	87	143	41	138	179
16h00-16h30	19	18	37	17	48	65
16h30-17h00	22	21	43	15	25	40
TOTAL:	41	39	80	32	73	105
GRAND TOTAL:	524	915	1439	436	774	1210

TOTAL FOR N. AND S.: 2649

TOTAL AT INTERSECTION: 6581

TABLE 6 (contd.)

c/o Main and Fifth streets (Side B)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	7	16	23	1	1	2
08h30-09h00	3	13	16	1	11	12
TOTAL:	10	29	39	2	12	14
09h00-09h30	13	34	47	5	10	15
09h30-10h00	10	19	29	4	7	11
TOTAL:	23	53	76	9	17	26
10h00-10h30	2	17	19	12	14	26
10h30-11h00	3	17	20	5	8	13
TOTAL:	5	34	39	17	22	39
11h00-11h30	6	12	18	8	11	19
11h30-12h00	6	3	9	10	9	19
TOTAL:	12	15	27	18	20	38
12h00-12h30	4	8	12	5	2	7
12h30-13h00	7	4	11	4	5	9
TOTAL:	11	12	23	9	7	16
13h00-13h30	3	8	11	-	4	4
13h30-14h00	6	4	10	3	5	8
TOTAL:	9	12	21	3	9	12
14h00-14h30	8	10	18	3	8	11
14h30-15h00	-	-	-	2	6	8
TOTAL:	8	10	18	5	14	19
15h00-15h30	5	5	10	3	3	6
15h30-16h00	2	15	17	4	13	17
TOTAL:	7	20	27	7	16	23
16h00-16h30	-	4	4	3	10	13
16h30-17h00	4	6	10	5	10	15
TOTAL:	4	10	14	8	20	28
GRAND TOTAL:	89	195	284	78	137	215

TOTAL FOR E. AND W.: 499

TABLE 6 (contd.)

c/o Main and Fifth streets (Side C)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	7	2	9	3	7	10
08h30-09h00	7	7	14	1	3	4
TOTAL:	14	9	23	4	10	14
09h00-09h30	5	6	11	4	1	5
09h30-10h00	3	4	7	1	1	2
TOTAL:	8	10	18	5	2	7
10h00-10h30	1	3	4	4	2	6
10h30-11h00	9	11	20	4	14	18
TOTAL:	10	14	24	8	16	24
11h00-11h30	12	5	17	5	9	14
11h30-12h00	1	13	14	3	13	16
TOTAL:	13	18	31	8	22	30
12h00-12h30	3	3	6	5	7	12
12h30-13h00	1	5	6	6	3	9
TOTAL:	4	8	12	11	10	21
13h00-13h30	10	5	15	12	22	34
13h30-14h00	2	4	6	5	11	16
TOTAL:	12	9	21	17	33	50
14h00-14h30	13	15	28	6	9	15
14h30-15h00	1	-	1	4	8	12
TOTAL:	14	15	29	10	17	27
15h00-15h30	-	2	2	3	7	10
15h30-16h00	-	-	-	-	4	4
TOTAL:	-	2	2	3	11	14
16h00-16h30	8	2	10	3	1	4
16h30-17h00	12	12	24	15	10	25
TOTAL:	20	14	34	18	11	29
GRAND TOTAL:	95	99	194	84	132	216

TOTAL FOR E. AND W.: 410

TABLE 6 (contd.)

c/o Main and Fifth streets (Side D)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	6	31	37	28	17	45
08h30-09h00	18	42	60	17	9	26
TOTAL:	24	73	97	45	26	71
09h00-09h30	47	60	107	33	47	80
09h30-10h00	36	49	85	29	20	49
TOTAL:	83	109	192	62	67	129
10h00-10h30	30	55	85	30	46	76
10h30-11h00	48	66	114	57	88	145
TOTAL:	78	121	199	87	134	221
11h00-11h30	48	61	109	24	72	96
11h30-12h00	30	97	127	24	48	72
TOTAL:	78	158	236	48	120	168
12h00-12h30	25	100	125	20	58	78
12h30-13h00	44	39	83	30	56	86
TOTAL:	69	139	208	50	114	164
13h00-13h30	14	52	66	19	49	68
13h30-14h00	20	45	65	18	52	70
TOTAL:	34	97	131	37	101	138
14h00-14h30	29	58	87	27	51	78
14h30-15h00	29	86	115	25	68	93
TOTAL:	58	144	202	52	119	171
15h00-15h30	26	64	90	31	67	98
15h30-16h00	34	58	92	21	78	99
TOTAL:	60	122	182	52	145	197
16h00-16h30	23	40	63	40	64	104
16h30-17h00	23	41	64	28	58	86
TOTAL:	46	81	127	68	122	190
GRAND TOTAL:	530	1044	1574	501	948	1449

TOTAL FOR N. AND S.: 3023

TABLE 6 (contd.)

c/o Main and Sixth streets (Side A)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	17	45	62	16	7	23
08h30-09h00	51	26	77	37	24	61
TOTAL:	68	71	139	53	31	84
09h00-09h30	43	18	61	31	25	56
09h30-10h00	53	36	89	28	17	45
TOTAL:	96	54	150	59	42	101
10h00-10h30	57	26	83	51	39	90
10h30-11h00	54	50	104	47	22	69
TOTAL:	111	76	187	98	61	159
11h00-11h30	71	29	100	50	39	89
11h30-12h00	73	43	116	37	35	72
TOTAL:	144	72	216	87	74	161
12h00-12h30	56	43	99	54	30	84
12h30-13h00	27	46	73	29	32	61
TOTAL:	83	89	172	83	62	145
13h00-13h30	33	63	96	41	56	97
13h30-14h00	43	44	87	39	34	73
TOTAL:	76	107	183	80	90	170
14h00-14h30	44	33	77	23	45	68
14h30-15h00	27	30	57	41	20	61
TOTAL:	71	63	134	64	65	129
15h00-15h30	23	29	52	17	21	38
15h30-16h00	25	23	48	13	26	39
TOTAL:	48	52	100	30	47	77
16h00-16h30	42	21	63	20	27	47
16h30-17h00	25	21	46	22	36	58
TOTAL:	67	42	109	42	63	105
GRAND TOTAL:	764	626	1390	596	535	1131

TOTAL FOR N. AND S.: 2521

TOTAL AT INTERSECTION: 8085

TABLE 6 (contd.)

c/o Main and Sixth streets (Side B)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	17	32	49	5	1	6
08h30-09h00	57	30	87	34	24	58
TOTAL:	74	62	136	39	25	64
09h00-09h30	30	23	53	11	23	34
09h30-10h00	37	11	48	8	17	25
TOTAL:	67	34	101	19	40	59
10h00-10h30	59	25	84	28	15	43
10h30-11h00	48	22	70	21	10	31
TOTAL:	107	47	154	49	25	74
11h00-11h30	70	34	104	64	24	88
11h30-12h00	39	20	59	30	19	49
TOTAL:	109	54	163	94	43	137
12h00-12h30	30	19	49	9	14	23
12h30-13h00	15	13	28	11	11	22
TOTAL:	45	32	77	20	25	45
13h00-13h30	27	12	39	23	25	48
13h30-14h00	27	15	42	16	29	45
TOTAL:	54	27	81	39	54	93
14h00-14h30	33	6	39	18	5	23
14h30-15h00	35	25	60	15	13	28
TOTAL:	68	31	99	33	18	51
15h00-15h30	14	20	34	14	9	23
15h30-16h00	24	18	42	32	16	48
TOTAL:	38	38	76	46	25	71
16h00-16h30	35	15	50	14	12	26
16h30-17h00	10	4	14	11	22	33
TOTAL:	45	19	64	25	34	59
GRAND TOTAL:	607	344	951	364	289	653

TOTAL FOR E. AND W.: 1604

TABLE 6 (contd.)

c/o Main and Sixth streets (Side C)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	8	4	12	3	1	4
08h30-09h00	3	7	10	6	3	9
TOTAL:	11	11	22	9	4	13
09h00-09h30	13	12	25	8	9	17
09h30-10h00	21	13	34	22	23	45
TOTAL:	34	25	59	30	32	62
10h00-10h30	15	8	23	9	5	14
10h30-11h00	18	22	40	33	22	55
TOTAL:	33	30	63	42	27	69
11h00-11h30	16	5	21	24	8	32
11h30-12h00	20	22	42	35	16	51
TOTAL:	36	27	63	59	24	83
12h00-12h30	37	9	46	30	8	38
12h30-13h00	15	12	27	28	12	40
TOTAL:	52	21	73	58	20	78
13h00-13h30	7	15	22	18	13	31
13h30-14h00	7	8	15	8	5	13
TOTAL:	14	23	37	26	18	44
14h00-14h30	24	10	34	14	14	28
14h30-15h00	8	9	17	16	10	26
TOTAL:	32	19	51	30	24	54
15h00-15h30	13	9	22	15	9	24
15h30-16h00	13	21	34	22	14	36
TOTAL:	26	30	56	37	23	60
16h00-16h30	30	20	50	48	20	68
16h30-17h00	19	23	42	21	27	48
TOTAL:	49	43	92	69	47	116
GRAND TOTAL:	287	229	516	360	219	579

TOTAL FOR E. AND W.: 1095

TABLE 6 (contd.)

c/o Main and Sixth streets (Side D)

TIME	GOING NORTH			GOING SOUTH		
	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	28	27	55	28	21	49
08h30-09h00	35	31	66	17	10	27
TOTAL:	63	58	121	45	31	76
09h00-09h30	46	23	69	70	35	105
09h30-10h00	52	21	73	52	50	102
TOTAL:	98	44	142	122	85	207
10h00-10h30	33	15	48	42	36	78
10h30-11h00	55	49	104	44	31	75
TOTAL:	88	64	152	86	67	153
11h00-11h30	82	32	114	70	26	96
11h30-12h00	96	42	138	44	26	70
TOTAL:	178	74	252	114	52	166
12h00-12h30	63	38	101	50	50	100
12h30-13h00	45	52	97	32	27	59
TOTAL:	108	90	198	82	77	159
13h00-13h30	57	70	127	70	82	152
13h30-14h00	36	55	91	35	45	80
TOTAL:	93	125	218	105	127	232
14h00-14h30	54	57	111	46	44	90
14h30-15h00	45	20	65	20	21	41
TOTAL:	99	77	176	66	65	131
15h00-15h30	49	23	72	16	26	42
15h30-16h00	39	24	63	32	39	71
TOTAL:	88	47	135	48	65	113
16h00-16h30	52	32	84	30	35	65
16h30-17h00	18	13	31	35	19	54
TOTAL:	70	45	115	65	54	119
GRAND TOTAL:	885	624	1509	733	623	1356

TOTAL FOR N. AND S.: 2865

TABLE 6 (contd.)

c/o Main and Seventh streets (Side A)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	20	36	56	13	7	20
08h30-09h00	38	33	71	29	14	43
TOTAL:	58	69	127	42	21	63
09h00-09h30	46	47	93	41	31	72
09h30-10h00	93	50	143	61	42	103
TOTAL:	139	97	236	102	73	175
10h00-10h30	113	53	166	77	40	117
10h30-11h00	74	53	127	71	31	102
TOTAL:	187	106	293	148	71	219
11h00-11h30	88	31	119	57	31	88
11h30-12h00	70	47	117	78	34	112
TOTAL:	158	78	236	135	65	200
12h00-12h30	81	62	143	56	56	112
12h30-13h00	37	48	85	49	55	104
TOTAL:	118	110	228	105	111	216
13h00-13h30	53	45	98	53	36	89
13h30-14h00	36	46	82	45	47	92
TOTAL:	89	91	180	98	83	181
14h00-14h30	24	28	52	31	19	50
14h30-15h00	51	47	98	47	36	83
TOTAL:	75	75	150	78	55	133
15h00-15h30	61	31	92	26	27	53
15h30-16h00	42	49	91	35	56	91
TOTAL:	103	80	183	61	83	144
16h00-16h30	56	38	94	40	27	67
16h30-17h00	37	20	57	32	20	52
TOTAL:	93	58	151	72	47	119
GRAND TOTAL:	1020	764	1784	841	609	1450

TOTAL FOR N. AND S.: 3234

TOTAL AT INTERSECTION: 9083

TABLE 6 (contd.)

c/o Main and Seventh streets (Side B)

TIME	GOING EAST			GOING WEST		
	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	10	8	18	1	5	6
08h30-09h00	20	3	23	9	3	12
TOTAL:	30	11	41	10	8	18
09h00-09h30	19	13	32	7	5	12
09h30-10h00	51	18	69	32	16	48
TOTAL:	70	31	101	39	21	60
10h00-10h30	46	27	73	46	17	63
10h30-11h00	45	27	72	36	13	49
TOTAL:	91	54	145	82	30	112
11h00-11h30	69	18	87	50	11	61
11h30-12h00	11	12	23	17	5	22
TOTAL:	80	30	110	67	16	83
12h00-12h30	32	11	43	37	9	46
12h30-13h00	16	13	29	25	19	44
TOTAL:	48	24	72	62	28	90
13h00-13h30	19	22	41	18	16	34
13h30-14h00	23	4	27	16	10	26
TOTAL:	42	26	68	34	26	60
14h00-14h30	14	5	19	5	5	10
14h30-15h00	21	13	34	13	7	20
TOTAL:	35	18	53	18	12	30
15h00-15h30	14	6	20	11	7	18
15h30-16h00	26	20	46	15	9	24
TOTAL:	40	26	66	26	16	42
16h00-16h30	34	13	47	32	19	51
16h30-17h00	6	11	17	13	10	23
TOTAL:	40	24	64	45	29	74
GRAND TOTAL:	476	244	720	383	186	569

TOTAL FOR E. AND W.: 1289

TABLE 6 (contd.)

c/o Main and Seventh streets (Side C)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	10	18	28	9	6	15
08h30-09h00	19	18	37	15	17	32
TOTAL:	29	36	65	24	23	47
09h00-09h30	20	8	28	12	10	22
09h30-10h00	40	10	50	30	25	55
TOTAL:	60	18	78	42	35	77
10h00-10h30	43	13	56	36	10	46
10h30-11h00	78	13	91	54	31	85
TOTAL:	121	26	147	9o	41	131
11h00-11h30	33	20	53	52	16	68
11h30-12h00	55	32	87	52	16	68
TOTAL:	88	52	140	104	32	136
12h00-12h30	58	26	84	55	32	87
12h30-13h00	26	29	55	32	21	53
TOTAL:	84	55	139	87	53	140
13h00-13h30	30	15	45	39	13	52
13h30-14h00	17	18	35	20	12	32
TOTAL:	47	33	80	59	25	84
14h00-14h30	15	25	40	31	18	49
14h30-15h00	38	19	57	26	22	48
TOTAL:	53	44	97	57	40	97
15h00-15h30	11	15	26	14	9	23
15h30-16h00	13	12	25	16	8	24
TOTAL:	24	27	51	30	17	47
16h00-16h30	21	15	36	28	17	45
16h30-17h00	23	18	41	24	17	41
TOTAL:	44	33	77	52	34	86
GRAND TOTAL:	550	324	874	545	300	845

TOTAL FOR E. AND W.: 1719

TABLE 6 (contd.)

c/o Main and Seventh streets (Side D)

TIME	GOING NORTH			GOING SOUTH		
	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	8	35	43	18	7	25
08h30-09h00	33	16	49	31	18	49
TOTAL:	41	51	92	49	25	74
09h00-09h30	80	32	112	66	32	98
09h30-10h00	40	15	55	22	18	40
TOTAL:	120	47	167	88	50	138
10h00-10h30	59	28	87	84	34	118
10h30-11h00	72	48	120	61	18	79
TOTAL:	131	76	207	145	52	197
11h00-11h30	60	40	100	90	50	140
11h30-12h00	87	13	100	72	48	120
TOTAL:	147	53	200	162	98	260
12h00-12h30	75	51	126	48	41	89
12h30-13h00	27	65	92	48	25	73
TOTAL:	102	116	218	96	66	162
13h00-13h30	48	55	103	45	45	90
13h30-14h00	40	31	71	36	45	81
TOTAL:	88	86	174	81	90	171
14h00-14h30	45	43	88	36	42	78
14h30-15h00	37	39	76	53	40	93
TOTAL:	82	82	164	89	82	171
15h00-15h30	23	25	48	37	23	60
15h30-16h00	38	24	62	26	34	60
TOTAL:	61	49	110	63	57	120
16h00-16h30	38	16	54	31	27	58
16h30-17h00	41	9	50	29	25	54
TOTAL:	79	25	104	60	52	112
GRAND TOTAL:	851	585	1436	833	572	1405

TOTAL FOR N. AND S.: 2841

TABLE 6 (contd.)

c/o Main and Eighth streets (Side A)

TIME	GOING NORTH			GOING SOUTH		
	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	5	28	33	21	11	32
08h30-09h00	11	14	25	25	11	36
TOTAL:	16	42	58	46	22	68
09h00-09h30	18	29	47	29	12	41
09h30-10h00	22	21	43	19	26	45
TOTAL:	40	50	90	48	38	86
10h00-10h30	12	27	39	23	20	43
10h30-11h00	38	15	53	32	14	46
TOTAL:	50	42	92	55	34	89
11h00-11h30	21	24	45	30	36	66
11h30-12h00	45	19	64	21	13	34
TOTAL:	66	43	109	51	49	100
12h00-12h30	24	36	60	13	18	31
12h30-13h00	20	39	59	15	27	42
TOTAL:	44	75	119	28	45	73
13h00-13h30	15	24	39	16	6	22
13h30-14h00	12	24	36	19	28	47
TOTAL:	27	48	75	35	34	69
14h00-14h30	14	18	32	25	24	49
14h30-15h00	25	22	47	15	28	43
TOTAL:	39	40	79	40	52	92
15h00-15h30	30	32	62	18	28	46
15h30-16h00	10	20	30	13	22	35
TOTAL:	40	52	92	31	50	81
16h00-16h30	24	20	44	20	21	41
16h30-17h00	49	12	61	24	17	41
TOTAL:	73	32	105	44	38	82
GRAND TOTAL:	395	424	819	378	362	740

TOTAL FOR N. AND S.: 1559

TOTAL AT INTERSECTION: 1855

TABLE 6 (contd.)

c/o Main and Eighth streets (Side B)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	5	1	6	-	2	2
08h30-09h00	9	1	10	6	1	7
TOTAL:	14	2	16	6	3	9
09h00-09h30	20	1	21	3	1	4
09h30-10h00	2	1	3	7	3	10
TOTAL:	22	2	24	10	4	14
10h00-10h30	14	1	15	6	1	7
10h30-11h00	8	1	9	13	1	14
TOTAL:	22	2	24	19	2	21
11h00-11h30	12	1	13	5	1	6
11h30-12h00	3	2	5	8	-	8
TOTAL:	15	3	18	13	1	14
12h00-12h30	4	2	6	9	-	9
12h30-13h00	4	1	5	5	-	5
TOTAL:	8	3	11	14	-	14
13h00-13h30	1	4	5	5	1	6
13h30-14h00	-	4	4	1	-	1
TOTAL:	1	8	9	6	1	7
14h00-14h30	9	8	17	4	1	5
14h30-15h00	11	11	22	5	3	8
TOTAL:	20	19	39	9	4	13
15h00-15h30	4	3	7	4	5	9
15h30-16h00	2	1	3	2	2	4
TOTAL	6	4	10	6	7	13
16h00-16h30	8	1	9	3	1	4
16h30-17h00	7	5	12	15	-	15
TOTAL:	15	6	21	18	1	19
GRAND TOTAL:	123	49	172	101	23	124

TOTAL FOR E. AND W.: 296

TABLE 6 (contd.)

c/o Main and Edwin streets (Side A)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	2	11	13	7	5	12
08h30-09h00	11	4	15	12	6	18
TOTAL:	13	15	28	19	11	30
09h00-09h30	15	3	18	16	3	19
09h30-10h00	11	14	25	12	8	20
TOTAL:	26	17	43	28	11	39
10h00-10h30	17	10	27	28	14	42
10h30-11h00	28	14	42	26	5	31
TOTAL:	45	24	69	54	19	73
11h00-11h30	19	10	29	15	7	22
11h30-12h00	19	7	26	9	10	19
TOTAL:	38	17	55	24	17	41
12h00-12h30	26	27	53	7	9	16
12h30-13h00	11	7	18	11	8	19
TOTAL:	37	34	71	18	17	35
13h00-13h30	16	12	28	3	13	16
13h30-14h00	8	11	19	6	10	16
TOTAL:	24	23	47	9	23	32
14h00-14h30	9	4	13	6	4	10
14h30-15h00	11	5	16	18	6	24
TOTAL:	20	9	29	24	10	34
15h00-15h30	17	10	27	4	8	12
15h30-16h00	15	7	22	6	6	12
TOTAL:	32	17	49	10	14	24
16h00-16h30	17	4	21	3	4	7
16h30-17h00	4	2	6	3	4	7
TOTAL:	21	6	27	6	8	14
GRAND TOTAL:	256	162	418	192	130	322

TOTAL FOR N. AND S.: 740

TOTAL AT INTERSECTION: 969

TABLE 6 (contd.)

c/o Main and Edwin streets (Side B)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	-	4	4	6	2	8
08h30-09h00	2	3	5	4	2	6
TOTAL:	2	7	9	10	4	14
09h00-09h30	9	4	13	10	-	10
09h30-10h00	2	2	4	9	-	9
TOTAL:	11	6	17	19	-	19
10h00-10h30	7	-	7	4	2	6
10h30-11h00	8	3	11	1	1	2
TOTAL:	15	3	18	5	3	8
11h00-11h30	3	-	3	11	3	14
11h30-12h00	5	4	9	4	3	7
TOTAL:	8	4	12	15	6	21
12h00-12h30	9	2	11	2	5	7
12h30-13h00	3	-	3	3	2	5
TOTAL:	12	2	14	5	7	12
13h00-13h30	6	5	11	-	5	5
13h30-14h00	1	-	1	6	2	8
TOTAL:	7	5	12	6	7	13
14h00-14h30	-	2	2	-	4	4
14h30-15h00	1	3	4	4	1	5
TOTAL:	1	5	6	4	5	9
15h00-15h30	4	1	5	6	2	8
15h30-16h00	4	-	4	3	2	5
TOTAL:	8	1	9	9	4	13
16h00-16h30	6	-	6	9	1	10
16h30-17h00	2	1	3	3	1	4
TOTAL:	8	1	9	12	2	14
GRAND TOTAL:	72	34	106	85	38	123

TOTAL FOR E. AND W.: 229

TABLE 6 (contd.)

c/o Main and Duncan streets (Side A)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	16	16	32	20	12	32
08h30-09h00	17	21	38	25	11	36
TOTAL:	33	37	70	45	23	68
09h00-09h30	26	15	41	46	9	55
09h30-10h00	45	13	58	35	21	56
TOTAL:	71	28	99	81	30	111
10h00-10h30	80	20	100	67	15	82
10h30-11h00	43	25	68	37	20	57
TOTAL:	123	45	168	104	35	139
11h00-11h30	41	16	57	61	21	82
11h30-12h00	72	11	83	55	13	68
TOTAL:	113	27	140	116	34	150
12h00-12h30	45	18	63	36	15	51
12h30-13h00	33	17	50	34	10	44
TOTAL:	78	35	113	70	25	95
13h00-13h30	11	16	27	37	28	65
13h30-14h00	17	4	21	11	11	22
TOTAL:	28	20	48	48	39	87
14h00-14h30	41	19	60	21	28	49
14h30-15h00	36	9	45	31	15	46
TOTAL:	77	28	105	52	43	95
15h00-15h30	9	15	24	19	9	28
15h30-16h00	9	10	19	14	25	39
TOTAL:	18	25	43	33	34	67
16h00-16h30	4	27	31	24	36	60
16h30-17h00	29	10	39	20	25	45
TOTAL:	33	37	70	44	61	105
GRAND TOTAL:	574	282	856	593	324	917

TOTAL FOR N. AND S.: 1773

TOTAL AT INTERSECTION: 4719

TABLE 6 (contd.)

c/o Main and Duncan streets (Side B)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	8	9	17	9	5	14
08h30-09h00	17	6	23	17	7	24
TOTAL:	25	15	40	26	12	38
09h00-09h30	40	7	47	38	6	44
09h30-10h00	39	17	56	34	16	50
TOTAL:	79	24	103	72	22	94
10h00-10h30	61	23	84	55	10	65
10h30-11h00	24	19	43	56	13	69
TOTAL:	85	42	127	111	23	134
11h00-11h30	42	11	53	45	11	56
11h30-12h00	58	10	68	54	9	63
TOTAL:	100	21	121	99	20	119
12h00-12h30	56	13	69	47	22	69
12h30-13h00	44	17	61	42	14	56
TOTAL:	100	30	130	89	36	125
13h00-13h30	33	12	45	32	17	49
13h30-14h00	20	16	36	26	12	38
TOTAL:	53	28	81	58	29	87
14h00-14h30	32	18	50	40	12	52
14h30-15h00	30	21	51	32	8	40
TOTAL:	62	39	101	72	20	92
15h00-15h30	20	18	38	11	22	33
15h30-16h00	26	30	56	10	6	16
TOTAL:	46	48	94	21	28	49
16h00-16h30	27	30	57	12	14	26
16h30-17h00	26	22	48	34	23	57
TOTAL:	53	52	105	46	37	83
GRAND TOTAL:	603	299	902	594	227	821

TOTAL FOR E. AND W.: 1723

TABLE 6 (contd.)

c/o Main and Duncan streets (Side C)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	2	10	12	2	2	4
08h30-09h00	2	-	2	5	-	5
TOTAL:	4	10	14	7	2	9
09h00-09h30	5	-	5	4	6	10
09h30-10h00	3	-	3	1	1	2
TOTAL:	8	-	8	5	7	12
10h00-10h30	1	-	1	1	2	3
10h30-11h00	3	-	3	5	1	6
TOTAL:	4	-	4	6	3	9
11h00-11h30	1	1	2	2	4	6
11h30-12h00	-	3	3	3	2	5
TOTAL:	1	4	5	5	6	11
12h00-12h30	3	-	3	4	2	6
12h30-13h00	1	1	2	5	-	5
TOTAL:	4	1	5	9	2	11
13h00-13h30	6	2	8	2	2	4
13h30-14h00	1	-	1	4	3	7
TOTAL:	7	2	9	6	5	11
14h00-14h30	-	2	2	2	1	3
14h30-15h00	1	-	1	-	1	1
TOTAL:	1	2	3	2	2	4
15h00-15h30	2	1	3	3	2	5
15h30-16h00	-	-	-	5	2	7
TOTAL:	2	1	3	8	4	12
16h00-16h30	1	2	3	3	3	6
16h30-17h00	5	1	6	3	1	4
TOTAL:	6	3	9	6	4	10
GRAND TOTAL:	37	23	60	54	35	89

TOTAL FOR E. AND W.: 149

TABLE 6 (contd.)

c/o Main and Duncan streets (Side D)

TIME	GOING NORTH			GOING SOUTH		
	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	11	17	28	7	3	10
08h30-09h00	9	9	18	9	8	17
TOTAL:	20	26	46	16	11	27
09h00-09h30	6	16	22	10	22	32
09h30-10h00	13	8	21	16	12	28
TOTAL:	19	24	43	26	34	60
10h00-10h30	22	16	38	15	12	27
10h30-11h00	13	11	24	12	14	26
TOTAL:	35	27	62	27	26	53
11h00-11h30	17	20	37	19	13	32
11h30-12h00	25	11	36	20	19	39
TOTAL:	42	31	73	39	32	71
12h00-12h30	13	8	21	14	18	32
12h30-13h00	21	12	33	13	9	22
TOTAL:	34	20	54	27	27	54
13h00-13h30	20	5	25	18	17	35
13h30-14h00	28	17	45	11	18	29
TOTAL:	48	22	70	29	35	64
14h00-14h30	21	12	33	17	13	30
14h30-15h00	22	17	39	11	16	27
TOTAL:	43	29	72	28	29	57
15h00-15h30	18	12	30	16	19	35
15h30-16h00	18	9	27	11	13	24
TOTAL:	36	21	57	27	32	59
16h00-16h30	19	13	32	13	19	32
16h30-17h00	29	18	47	18	23	41
TOTAL:	48	31	79	31	42	73
GRAND TOTAL:	325	231	556	250	268	518

TOTAL FOR N. AND S.: 1074

TABLE 6 (contd.)

c/o Main and Cecil streets (Side A)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	4	8	12	1	5	6
08h30-09h00	1	5	6	5	-	5
TOTAL:	5	13	18	6	5	11
09h00-09h30	6	2	8	10	5	15
09h30-10h00	6	5	11	3	8	11
TOTAL:	12	7	19	13	13	26
10h00-10h30	1	7	8	4	4	8
10h30-11h00	8	3	11	8	1	9
TOTAL:	9	10	19	12	5	17
11h00-11h30	3	4	7	7	5	12
11h30-12h00	3	3	6	7	9	16
TOTAL:	6	7	13	14	14	28
12h00-12h30	14	3	17	6	-	6
12h30-13h00	15	3	18	12	4	16
TOTAL:	29	6	35	18	4	22
13h00-13h30	4	4	8	15	8	23
13h30-14h00	21	3	24	9	4	13
TOTAL:	25	7	32	24	12	36
14h00-14h30	11	6	17	8	5	13
14h30-15h00	9	1	10	3	2	5
TOTAL:	20	7	27	11	7	18
15h00-15h30	8	6	14	11	2	13
15h30-16h00	11	2	13	5	4	9
TOTAL:	19	8	27	16	6	22
16h00-16h30	14	4	18	17	8	25
16h30-17h00	9	5	14	6	4	10
TOTAL:	23	9	32	23	12	35
GRAND TOTAL:	148	74	222	137	78	215

TOTAL FOR N. AND S.: 437

TOTAL AT INTERSECTION: 858

TABLE 6 (contd.)

c/o Main and Cecil streets (Side B)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	-	10	10	5	11	16
08h30-09h00	2	5	7	2	2	4
TOTAL:	2	15	17	7	13	20
09h00-09h30	5	2	7	6	4	10
09h30-10h00	1	10	11	4	5	9
TOTAL:	6	12	18	10	9	19
10h00-10h30	1	5	6	3	8	11
10h30-11h00	4	2	6	3	1	4
TOTAL:	5	7	12	6	9	15
11h00-11h30	3	8	11	5	7	12
11h30-12h00	4	7	11	8	5	13
TOTAL:	7	15	22	13	12	25
12h00-12h30	1	8	9	8	11	19
12h30-13h00	12	8	20	21	8	29
TOTAL:	13	16	29	29	19	48
13h00-13h30	13	10	23	8	7	15
13h30-14h00	6	3	9	9	6	15
TOTAL:	19	13	32	17	13	30
14h00-14h30	4	5	9	6	4	10
14h30-15h00	1	5	6	4	6	10
TOTAL:	5	10	15	10	10	20
15h00-15h30	5	5	10	7	4	11
15h30-16h00	4	4	8	6	4	10
TOTAL:	9	9	18	13	8	21
16h00-16h30	11	6	17	7	7	14
16h30-17h00	9	4	13	5	11	16
TOTAL:	20	10	30	12	18	30
GRAND TOTAL:	86	107	193	117	111	228

TOTAL FOR E. AND W.: 421

TABLE 6 (contd.)

Opposite Main and Fifth streets - Second-Hand Car Sales (25)

TIME	GOING NORTH			GOING SOUTH		
	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	3	13	16	2	1	3
08h30-09h00	4	10	14	4	7	11
TOTAL:	7	23	30	6	8	14
09h00-09h30	15	9	24	23	19	42
09h30-10h00	10	18	28	12	21	33
TOTAL:	25	27	52	35	40	75
10h00-10h30	9	16	25	13	12	25
10h30-11h00	8	11	19	12	23	35
TOTAL:	17	27	44	25	35	60
11h00-11h30	8	10	18	21	17	38
11h30-12h00	16	10	26	22	16	38
TOTAL:	24	20	44	43	33	76
12h00-12h30	23	14	37	22	20	42
12h30-13h00	11	12	23	4	15	19
TOTAL:	34	26	60	26	35	61
13h00-13h30	10	7	17	19	14	33
13h30-14h00	13	10	23	15	22	37
TOTAL:	23	17	40	34	36	70
14h00-14h30	21	13	34	17	16	33
14h30-15h00	23	8	31	18	20	38
TOTAL:	44	21	65	35	36	71
15h00-15h30	26	7	33	29	18	47
15h30-16h00	20	10	30	24	16	40
TOTAL:	46	17	63	53	34	87
16h00-16h30	22	14	36	20	21	41
16h30-17h00	21	9	30	10	14	24
TOTAL:	43	23	66	30	35	65
GRAND TOTAL:	263	201	464	287	292	579

TOTAL FOR N. AND S.: 1043

TABLE 6 (contd.)

Opposite Main and Seventh streets - in front of Trust Bank (26)

TIME	GOING NORTH			GOING SOUTH		
	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	5	8	13	13	3	16
08h30-09h00	10	6	16	11	3	14
TOTAL:	15	14	29	24	6	30
09h00-09h30	36	6	42	18	12	30
09h30-10h00	25	8	33	41	5	46
TOTAL:	61	14	75	59	17	76
10h00-10h30	49	14	63	33	8	41
10h30-11h00	37	25	62	28	14	42
TOTAL:	86	39	125	61	22	83
11h00-11h30	33	18	51	47	13	60
11h30-12h00	33	10	43	22	9	31
TOTAL	66	28	94	69	22	91
12h00-12h30	29	10	39	26	15	41
12h30-13h00	17	7	24	23	28	51
TOTAL:	46	17	63	49	43	92
13h00-13h30	17	7	24	14	10	24
13h30-14h00	12	5	17	12	4	16
TOTAL:	29	12	41	26	14	40
14h00-14h30	9	11	20	18	8	26
14h30-15h00	11	2	13	8	5	13
TOTAL:	20	13	33	26	13	39
15h00-15h30	9	8	17	12	8	20
15h30-16h00	15	12	27	7	6	13
TOTAL:	24	20	44	19	14	33
16h00-16h30	26	22	48	23	17	40
16h30-17h00	11	15	26	6	9	15
TOTAL:	37	37	74	29	26	55
GRAND TOTAL:	384	194	578	362	177	539

TOTAL FOR N. AND S.: 1117

TABLE 7

TABLES SHOWING PEDESTRIAN COUNTS IN THE C.B.D. ON A SATURDAY 16/6/73

(Refer to figure 15 for the location of the counting position).
c/o Main and Sutherland streets (Side A)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	5	59	64	3	10	13
08h15-08h30	9	60	69	1	4	5
08h30-08h45	15	62	77	1	12	13
08h45-09h00	24	66	90	4	19	23
TOTAL:	53	247	300	9	45	54
09h00-09h15	29	58	87	17	26	43
09h15-09h30	31	118	149	14	10	24
09h30-09h45	43	118	161	12	17	29
09h45-10h00	45	90	135	30	20	50
TOTAL:	148	384	532	73	73	146
10h00-10h15	37	106	145	23	41	64
10h15-10h30	44	147	191	16	36	52
10h30-10h45	41	92	133	18	23	41
10h45-11h00	40	164	204	20	77	97
TOTAL:	162	509	671	77	177	254
11h00-11h15	41	159	200	12	50	62
11h15-11h30	37	110	147	32	70	102
11h30-11h45	37	174	211	24	76	100
11h45-12h00	32	80	112	33	52	85
TOTAL:	147	523	670	101	248	349
12h00-12h15	17	70	87	12	68	80
12h15-12h30	25	78	103	7	49	56
12h30-12h45	11	50	61	12	57	69
12h45-13h00	7	27	34	7	49	56
TOTAL:	60	225	285	38	223	261
GRAND TOTAL:	570	1888	2458	298	766	1064

TOTAL FOR N. AND S.: 3522

TOTAL AT INTERSECTION: 5352

TABLE 7 (contd)

c/o Main and Sutherland streets (Side B)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	1	10	11	4	29	33
08h15-08h30	5	5	10	4	16	20
08h30-08h45	3	1	4	6	34	40
08h45-09h00	1	4	5	3	35	38
TOTAL:	10	20	30	17	114	131
09h00-09h15	1	3	4	12	22	34
09h15-09h30	5	4	9	4	36	40
09h30-09h45	5	2	7	19	60	79
09h45-10h00	8	6	14	21	75	96
TOTAL:	19	15	34	56	193	249
10h00-10h15	11	7	18	17	58	75
10h15-10h30	8	11	19	11	67	78
10h30-10h45	8	4	12	18	82	100
10h45-11h00	3	6	9	22	75	97
TOTAL:	30	28	58	68	282	350
11h00-11h15	7	4	11	26	97	123
11h15-11h30	4	3	7	10	54	64
11h30-11h45	1	4	5	27	106	133
11h45-12h00	3	7	10	10	70	80
TOTAL:	15	18	33	73	327	400
12h00-12h15	2	5	7	25	140	165
12h15-12h30	3	6	9	8	88	96
12h30-12h45	5	9	14	17	135	152
12h45-13h00	2	3	5	3	94	97
TOTAL:	12	23	35	53	457	510
GRAND TOTAL:	86	104	190	267	1373	1640

TOTAL FOR E. AND W.: 1830

TABLE 7 (contd.)

c/o Main and Fifth streets (Side A)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	13	68	81	5	11	16
08h15-08h30	14	60	74	10	30	40
08h30-08h45	20	56	76	12	48	60
08h45-09h00	38	62	100	33	53	86
TOTAL:	85	246	331	60	142	202
09h00-09h15	37	84	121	29	50	79
09h15-09h30	47	112	159	30	56	86
09h30-09h45	65	125	190	36	82	118
09h45-10h00	83	123	206	48	71	119
TOTAL:	232	444	676	143	259	402
10h00-10h15	103	153	256	51	107	158
10h15-10h30	52	125	177	30	78	108
10h30-10h45	51	118	169	37	88	125
10h45-11h00	51	154	205	42	110	152
TOTAL:	257	550	807	160	383	543
11h00-11h15	71	141	212	52	119	171
11h15-11h30	26	156	182	57	140	197
11h30-11h45	50	82	132	58	106	164
11h45-12h00	46	75	121	38	105	143
TOTAL:	193	454	647	205	470	675
12h00-12h15	30	91	121	35	144	179
12h15-12h30	42	92	134	36	164	200
12h30-12h45	23	51	74	23	98	121
12h45-13h00	16	43	59	20	98	118
TOTAL:	111	277	388	114	504	618
GRAND TOTAL:	878	1971	2849	682	1758	2440

TOTAL FOR N. AND S.: 5289

TOTAL AT INTERSECTION: 9361

TABLE 7 (contd.)

c/o Main and Fifth streets (Side B)

TIME	GOING EAST			GOING WEST		
	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	5	30	35	-	6	6
08h15-08h30	8	18	26	1	11	12
08h30-08h45	7	18	25	3	3	6
08h45-09h00	5	9	14	8	10	18
TOTAL:	25	75	100	12	30	42
09h00-09h15	3	16	19	5	9	14
09h15-09h30	12	13	25	7	18	25
09h30-09h45	17	13	30	13	8	21
09h45-10h00	21	37	58	2	10	12
TOTAL:	53	79	132	27	45	72
10h00-10h15	16	36	52	2	18	20
10h15-10h30	4	10	14	-	3	3
10h30-10h45	27	21	48	12	9	21
10h45-11h00	1	2	3	2	4	6
TOTAL:	48	69	117	16	34	50
11h00-11h15	10	19	29	19	7	26
11h15-11h30	7	7	14	6	10	16
11h30-11h45	4	20	24	2	10	12
11h45-12h00	13	9	22	2	10	12
TOTAL:	34	55	89	29	37	66
12h00-12h15	4	8	12	8	13	21
12h15-12h30	3	11	14	8	5	13
12h30-12h45	6	10	16	3	15	18
12h45-13h00	4	4	8	9	15	24
TOTAL:	17	33	50	28	48	76
GRAND TOTAL:	177	311	488	112	194	306

TOTAL FOR E. AND W.: 794

TABLE 7 (contd.)

c/o Main and Fifth streets (Side C)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	5	9	12	3	1	4
08h15-08h30	3	9	12	-	-	-
08h30-08h45	2	4	6	2	2	4
08h45-09h00	4	4	8	4	-	4
TOTAL:	14	24	38	9	3	12
09h00-09h15	3	2	5	1	-	1
09h15-09h30	5	4	9	2	1	3
09h30-09h45	10	6	16	7	1	8
09h45-10h00	17	2	19	6	2	8
TOTAL:	35	14	49	16	4	20
10h00-10h15	10	2	12	4	10	14
10h15-10h30	12	-	12	6	3	9
10h30-10h45	2	4	6	2	4	6
10h45-11h00	2	3	5	2	1	3
TOTAL:	26	9	35	14	18	32
11h00-11h15	5	2	7	1	3	4
11h15-11h30	7	2	9	3	2	5
11h30-11h45	2	3	5	3	4	7
11h45-12h00	1	2	3	1	6	7
TOTAL:	15	9	24	8	15	23
12h00-12h15	5	7	12	5	1	6
12h15-12h30	-	-	-	3	-	3
12h30-12h45	4	4	8	3	1	4
12h45-13h00	-	-	-	4	7	11
TOTAL:	9	11	20	15	9	24
GRAND TOTAL:	99	67	166	62	49	111

TOTAL FOR E. AND W.: 277

TABLE 7 (contd.)

c/o Main and Fifth streets (Side D)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	6	49	55	7	6	13
08h15-08h30	2	40	42	7	18	25
08h30-08h45	15	49	64	10	40	50
08h45-09h00	25	51	76	20	22	42
TOTAL:	48	189	237	44	86	130
09h00-09h15	32	53	85	23	31	54
09h15-09h30	34	94	128	16	29	45
09h30-09h45	34	91	125	28	34	62
09h45-10h00	33	64	97	31	28	59
TOTAL:	133	302	435	98	122	220
10h00-10h15	29	78	107	45	48	93
10h15-10h30	30	81	111	24	35	59
10h30-10h45	35	84	119	31	42	73
10h45-11h00	53	106	159	22	46	68
TOTAL:	147	349	496	122	171	293
11h00-11h15	27	70	97	26	28	54
11h15-11h30	37	52	89	45	37	82
11h30-11h45	37	68	105	42	39	81
11h45-12h00	40	85	125	38	35	73
TOTAL:	141	275	416	151	139	290
12h00-12h15	32	50	82	15	30	45
12h15-12h30	20	60	80	25	30	55
12h30-12h45	20	31	51	19	56	75
12h45-13h00	18	24	42	18	36	54
TOTAL:	90	165	255	77	152	229
GRAND TOTAL:	559	1280	1839	492	670	1162

TOTAL FOR N. AND S.: 3001

TABLE 7 (contd.)

c/o Main and Sixth streets (Side A)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	10	32	42	14	15	29
08h15-08h30	20	28	48	10	23	33
08h30-08h45	22	36	58	16	22	38
08h45-09h00	38	41	79	24	25	49
TOTAL:	90	137	227	64	85	149
09h00-09h15	43	43	86	43	31	74
09h15-09h30	57	35	92	54	40	94
09h30-09h45	72	72	144	54	39	93
09h45-10h00	76	70	146	54	21	75
TOTAL:	248	220	468	205	131	336
10h00-10h15	76	62	138	70	50	120
10h15-10h30	56	66	122	47	40	87
10h30-10h45	53	70	123	85	72	157
10h45-11h00	63	63	126	82	54	136
TOTAL:	248	261	509	284	216	500
11h00-11h15	68	86	154	95	72	167
11h15-11h30	65	84	149	58	66	124
11h30-11h45	50	79	129	45	90	135
11h45-12h00	45	78	123	74	102	176
TOTAL:	228	327	555	272	330	602
12h00-12h15	53	47	100	50	71	121
12h15-12h30	48	41	89	49	100	149
12h30-12h45	31	75	106	35	90	125
12h45-13h00	14	13	27	27	33	60
TOTAL:	146	176	322	161	294	455
GRAND TOTAL:	960	1121	2081	986	1056	2042

TOTAL FOR N. AND S.: 4123

TOTAL AT INTERSECTION: 10523

TABLE 7 (contd.)

c/o Main and Sixth streets (Side B)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	13	16	29	8	9	17
08h15-08h30	17	15	32	4	3	7
08h30-08h45	23	9	32	15	7	22
08h45-09h00	37	11	48	11	10	21
TOTAL:	90	51	141	38	29	67
09h00-09h15	36	10	46	26	11	37
09h15-09h30	28	11	39	22	7	29
09h30-09h45	57	13	70	26	16	42
09h45-10h00	53	20	73	26	10	36
TOTAL:	174	54	228	100	44	144
10h00-10h15	53	14	67	31	6	37
10h15-10h30	53	18	71	36	11	47
10h30-10h45	43	12	55	35	9	44
10h45-11h00	37	11	48	21	10	31
TOTAL:	186	55	241	123	36	159
11h00-11h15	48	22	70	53	20	73
11h15-11h30	42	17	59	24	15	39
11h30-11h45	25	18	43	21	15	36
11h45-12h00	33	23	56	36	13	49
TOTAL:	148	80	228	134	63	197
12h00-12h15	48	9	57	12	9	21
12h15-12h30	17	12	29	18	10	28
12h30-12h45	23	14	37	14	16	30
12h45-13h00	12	7	19	11	10	21
TOTAL:	100	42	142	55	45	100
GRAND TOTAL:	698	282	980	450	217	667

TOTAL FOR E. AND W.: 1647

TABLE 7 (contd.)

c/o Main and Sixth streets (Side C)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	3	7	10	6	4	10
08h15-08h30	5	1	6	-	6	6
08h30-08h45	6	12	18	10	11	21
08h45-09h00	15	5	20	10	9	19
TOTAL:	29	25	54	26	30	56
09h00-09h15	18	10	28	14	9	23
09h15-09h30	11	11	22	15	13	28
09h30-09h45	24	10	34	35	18	53
09h45-10h00	42	14	56	19	10	29
TOTAL:	95	45	140	83	50	133
10h00-10h15	32	18	50	38	12	50
10h15-10h30	21	7	28	20	6	26
10h30-10h45	24	25	49	28	5	33
10h45-11h00	45	9	54	26	3	29
TOTAL:	122	59	181	112	26	138
11h00-11h15	40	10	50	37	14	51
11h15-11h30	49	22	71	16	16	32
11h30-11h45	27	11	38	17	5	22
11h45-12h00	28	24	52	27	13	40
TOTAL:	144	67	211	97	48	145
12h00-12h15	31	8	39	4	6	10
12h15-12h30	22	9	31	16	10	26
12h30-12h45	14	7	21	14	1	15
12h45-13h00	15	2	17	7	7	14
TOTAL:	82	26	108	41	24	65
GRAND TOTAL:	472	222	694	359	178	537

TOTAL FOR E. AND W.: 1231

TABLE 7 (contd.)

c/o Main and Sixth streets (Side D)

TIME	GOING NORTH			GOING SOUTH		
	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	12	28	40	1	15	16
08h15-08h30	11	21	32	15	19	34
08h30-08h45	15	33	48	17	21	38
08h45-09h00	25	41	66	21	19	40
TOTAL:	63	123	186	54	74	128
09h00-09h15	33	42	75	49	25	74
09h15-09h30	47	45	92	44	36	80
09h30-09h45	59	74	133	53	30	83
09h45-10h00	71	77	148	90	36	126
TOTAL:	210	238	448	236	127	363
10h00-10h15	78	65	143	63	53	116
10h15-10h30	69	67	136	43	40	83
10h30-10h45	81	76	157	74	54	128
10h45-11h00	65	53	118	85	55	140
TOTAL:	293	261	554	265	202	467
11h00-11h15	85	68	153	79	46	125
11h15-11h30	44	37	81	24	22	46
11h30-11h45	53	64	117	48	56	104
11h45-12h00	38	77	115	46	54	100
TOTAL:	220	246	464	197	178	375
12h00-12h15	35	38	73	58	45	103
12h15-12h30	37	18	55	38	55	93
12h30-12h45	60	25	85	22	46	68
12h45-13h00	15	15	30	17	11	28
TOTAL:	147	96	243	135	157	292
GRAND TOTAL:	933	964	1897	887	738	1625

TOTAL FOR N. AND S.: 3522

TABLE 7 (contd.)

c/o Main and Seventh streets (Side A)

TIME	GOING NORTH			GOING SOUTH		
	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	26	63	89	13	20	30
08h15-08h30	31	52	83	28	18	46
08h30-08h45	43	24	67	22	22	44
08h45-09h00	12	19	31	22	20	42
TOTAL:	112	158	270	85	80	165
09h00-09h15	36	27	63	28	8	36
09h15-09h30	48	31	79	22	28	50
09h30-09h45	72	34	106	47	14	61
09h45-10h00	86	35	121	100	25	125
TOTAL:	242	127	369	197	75	272
10h00-10h15	101	39	140	79	31	110
10h15-10h30	140	68	208	91	32	123
10h30-10h45	66	45	111	88	34	122
10h45-11h00	120	50	170	114	50	164
TOTAL:	427	202	629	372	147	519
11h00-11h15	81	67	148	79	47	126
11h15-11h30	76	45	121	69	52	121
11h30-11h45	44	22	66	38	23	61
11h45-12h00	50	45	95	45	34	79
TOTAL:	251	179	430	231	156	387
12h00-12h15	76	56	132	48	70	118
12h15-12h30	26	48	74	67	78	145
12h30-12h45	21	11	32	16	12	28
12h45-13h00	40	40	80	7	31	38
TOTAL:	163	155	318	138	191	329
GRAND TOTAL:	1195	821	2016	1023	649	1672

TOTAL FOR N. AND S.: 3688

TOTAL AT INTERSECTION: 9652

TABLE 7 (contd.)

c/o Main and Seventh streets (Side B)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	10	17	27	2	7	9
08h15-08h30	14	7	21	2	5	7
08h30-08h45	17	8	25	4	9	13
08h45-09h00	33	12	45	8	10	18
TOTAL:	74	44	118	16	31	47
09h00-09h15	22	9	31	11	2	13
09h15-09h30	30	4	34	20	3	23
09h30-09h45	49	8	57	28	3	31
09h45-10h00	53	8	61	30	3	33
TOTAL:	154	29	183	89	11	100
10h00-10h15	71	13	84	53	5	58
10h15-10h30	79	16	95	14	13	27
10h30-10h45	46	13	59	34	15	49
10h45-11h00	35	17	52	27	7	34
TOTAL:	231	59	290	128	40	168
11h00-11h15	22	6	28	8	5	13
11h15-11h30	14	5	19	13	10	23
11h30-11h45	18	4	22	11	10	21
11h45-12h00	19	10	29	7	9	16
TOTAL:	73	25	98	39	34	73
12h00-12h15	17	9	26	19	11	30
12h15-12h30	4	4	8	9	3	12
12h30-12h45	10	4	14	7	6	13
12h45-13h00	7	3	10	4	4	8
TOTAL:	38	20	58	39	24	63
GRAND TOTAL:	570	177	747	311	140	451

TOTAL FOR E. AND W.: 1198

TABLE 7 (contd.)

c/o Main and Seventh streets (Side C)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	8	10	18	4	6	10
08h15-08h30	12	13	25	5	15	20
08h30-08h45	30	9	39	11	8	19
08h45-09h00	13	2	15	7	6	13
TOTAL:	63	34	97	27	35	62
09h00-09h15	17	8	25	12	5	17
09h15-09h30	15	1	16	11	2	13
09h30-09h45	29	19	48	17	7	24
09h45-10h00	36	6	42	22	9	31
TOTAL:	97	34	131	62	23	85
10h00-10h15	37	9	46	37	11	48
10h15-10h30	24	7	31	17	4	21
10h30-10h45	10	4	14	6	-	6
10h45-11h00	15	4	19	3	1	4
TOTAL:	86	24	110	63	16	79
11h00-11h15	15	5	20	4	3	7
11h15-11h30	29	6	35	16	5	21
11h30-11h45	19	9	28	28	7	35
11h45-12h00	11	16	27	13	4	17
TOTAL:	74	36	110	61	19	80
12h00-12h15	13	10	23	6	3	9
12h15-12h30	16	26	42	16	27	43
12h30-12h45	23	22	45	4	4	8
12h45-13h00	9	10	19	7	4	11
TOTAL:	61	68	129	33	38	71
GRAND TOTAL:	381	196	577	246	131	377

TOTAL FOR E. AND W.: 954

TABLE 7 (contd.)

c/o Main and Seventh streets (Side D)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	14	52	66	16	34	50
08h15-08h30	33	48	81	30	29	59
08h30-08h45	9	13	22	24	21	45
08h45-09h00	13	25	38	34	20	54
TOTAL:	69	138	207	104	104	208
09h00-09h15	52	27	79	40	11	51
09h15-09h30	46	33	79	28	32	60
09h30-09h45	56	59	115	78	55	133
09h45-10h00	67	88	155	99	39	138
TOTAL:	221	207	428	245	137	382
10h00-10h15	72	76	148	77	44	121
10h15-10h30	75	83	158	91	34	125
10h30-10h45	86	64	150	67	56	123
10h45-11h00	70	40	110	80	33	113
TOTAL:	303	263	566	315	167	482
11h00-11h15	68	52	120	80	61	141
11h15-11h30	73	56	129	56	52	108
11h30-11h45	81	72	153	65	60	125
11h45-12h00	66	72	138	73	60	133
TOTAL:	288	252	540	274	233	507
12h00-12h15	60	45	105	40	41	81
12h15-12h30	75	39	114	41	57	98
12h30-12h45	16	14	30	20	14	34
12h45-13h00	9	4	13	7	10	17
TOTAL:	160	102	262	108	122	230
GRAND TOTAL:	1041	962	2003	1046	763	1809

TOTAL FOR N. AND S.: 3812

TABLE 7 (contd.)

c/o Main and Eighth streets (Side A)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	2	12	14	7	11	18
08h15-08h30	1	9	10	6	6	12
08h30-08h45	8	12	20	18	8	26
08h45-09h00	6	15	21	12	4	16
TOTAL:	17	48	65	43	29	72
09h00-09h15	10	7	17	21	11	32
09h15-09h30	16	10	26	21	15	36
09h30-09h45	15	12	27	45	7	52
09h45-10h00	25	13	38	52	15	67
TOTAL:	66	42	108	139	48	187
10h00-10h15	33	7	40	32	13	45
10h15-10h30	31	11	42	30	13	43
10h30-10h45	31	14	45	34	27	61
10h45-11h00	30	8	38	28	19	47
TOTAL:	125	40	165	124	72	196
11h00-11h15	48	18	66	40	38	78
11h15-11h30	30	9	39	27	22	49
11h30-11h45	28	15	43	40	38	78
11h45-12h00	42	11	53	37	35	72
TOTAL:	148	53	201	144	133	277
12h00-12h15	40	12	52	37	36	73
12h15-12h30	31	23	54	11	28	39
12h30-12h45	15	7	22	11	15	26
12h45-13h00	26	15	41	12	10	22
TOTAL:	112	57	169	71	89	160
GRAND TOTAL:	468	240	708	521	371	892

TOTAL FOR N. AND S.: 1600

TOTAL AT INTERSECTION: 2055

TABLE 7 (contd.)

c/o Main and Eighth streets (Side B)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	3	5	8	-	-	-
08h15-08h30	-	1	1	-	1	1
08h30-08h45	9	-	9	6	1	7
08h45-09h00	4	-	4	1	2	3
TOTAL:	16	6	22	7	4	11
09h00-09h15	3	-	3	7	1	8
09h15-09h30	7	1	8	11	1	12
09h30-09h45	15	-	15	6	-	6
09h45-10h00	15	4	19	11	-	11
TOTAL:	40	5	45	35	2	37
10h00-10h15	13	1	14	16	2	18
10h15-10h30	4	-	4	15	1	16
10h30-10h45	15	1	16	15	4	19
10h45-11h00	7	1	8	10	2	12
TOTAL:	39	3	42	56	9	65
11h00-11h15	12	4	16	28	5	33
11h15-11h30	13	1	14	12	4	16
11h30-11h45	14	3	17	23	5	28
11h45-12h00	12	2	14	18	1	19
TOTAL:	51	10	61	81	15	96
12h00-12h15	10	1	11	22	1	23
12h15-12h30	2	1	3	16	3	19
12h30-12h45	-	-	-	3	2	5
12h45-13h00	2	-	2	10	3	13
TOTAL:	14	2	16	51	9	60
GRAND TOTAL:	160	26	186	230	39	269

TOTAL FOR E. AND W.: 455

TABLE 7 (contd.)

c/o Main and Edwin streets (Side A)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	2	6	8	7	4	11
08h15-08h30	2	6	8	1	2	3
08h30-08h45	1	3	4	8	5	13
08h45-09h00	9	6	15	10	3	13
TOTAL:	14	21	35	26	14	40
09h00-09h15	10	9	19	11	10	21
09h15-09h30	8	4	12	10	4	14
09h30-09h45	12	8	20	31	6	37
09h45-10h00	11	9	20	18	2	20
TOTAL:	41	30	71	70	22	92
10h00-10h15	11	3	14	13	4	17
10h15-10h30	12	6	18	18	2	20
10h30-10h45	16	3	19	17	4	21
10h45-11h00	24	10	34	18	2	20
TOTAL:	63	22	85	66	12	78
11h00-11h15	12	12	24	13	6	19
11h15-11h30	24	14	38	14	16	30
11h30-11h45	13	4	17	11	5	16
11h45-12h00	23	5	28	8	6	14
TOTAL:	72	35	107	46	33	79
12h00-12h15	21	15	36	14	7	21
12h15-12h30	14	6	20	8	4	12
12h30-12h45	8	3	11	4	5	9
12h45-13h00	3	3	6	3	5	8
TOTAL:	46	27	73	29	21	50
GRAND TOTAL:	236	135	371	237	102	339

TOTAL FOR N. AND S.: 710

TOTAL AT INTERSECTION: 1079

TABLE 7 (contd.)

c/o Main and Edwin streets (Side B)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	2	3	5	5	-	5
08h15-08h30	-	2	2	1	1	2
08h30-08h45	-	1	1	4	2	6
08h45-09h00	3	2	5	5	1	6
TOTAL:	5	8	13	15	4	19
09h00-09h15	3	2	5	4	1	5
09h15-09h30	2	1	3	11	3	14
09h30-09h45	17	1	18	18	-	18
09h45-10h00	10	1	11	12	5	17
TOTAL:	32	5	37	45	9	54
10h00-10h15	13	-	13	4	1	5
10h15-10h30	14	4	18	14	2	16
10h30-10h45	10	2	12	12	1	13
10h45-11h00	14	4	18	11	1	12
TOTAL:	51	10	61	41	5	46
11h00-11h15	7	1	8	5	3	8
11h15-11h30	16	8	24	10	3	13
11h30-11h45	4	3	7	7	3	10
11h45-12h00	5	4	9	7	3	10
TOTAL:	32	16	48	29	12	41
12h00-12h15	10	3	13	14	1	15
12h15-12h30	8	2	10	1	2	3
12h30-12h45	3	1	4	-	2	2
12h45-13h00	3	-	3	-	-	-
TOTAL:	24	6	30	15	5	20
GRAND TOTAL:	144	45	189	145	35	180

TOTAL FOR E. AND W.: 369

TABLE 7 (contd.)

c/o Main and Duncan streets (Side A)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	16	25	41	21	9	30
08h15-08h30	14	19	33	8	8	16
08h30-08h45	27	17	44	10	23	33
08h45-09h00	34	12	46	49	21	70
TOTAL:	91	73	164	88	61	149
09h00-09h15	49	16	65	33	12	45
09h15-09h30	68	24	92	44	31	75
09h30-09h45	53	36	89	45	38	83
09h45-10h00	80	21	101	36	17	53
TOTAL:	250	97	347	158	98	256
10h00-10h15	69	21	90	79	45	124
10h15-10h30	79	42	121	53	27	80
10h30-10h45	68	44	112	63	24	87
10h45-11h00	86	41	127	71	28	99
TOTAL:	302	148	450	266	124	390
11h00-11h15	59	24	83	77	20	97
11h15-11h30	83	40	123	58	34	92
11h30-11h45	79	25	104	70	32	102
11h45-12h00	44	38	82	48	26	74
TOTAL:	265	127	392	253	112	365
12h00-12h15	46	24	70	24	20	44
12h15-12h30	43	23	66	37	32	69
12h30-12h45	22	22	44	20	23	43
12h45-13h00	19	20	39	12	11	23
TOTAL:	130	89	219	93	86	179
GRAND TOTAL:	1038	534	1572	858	481	1339

TOTAL FOR N. AND S.: 2911

TOTAL AT INTERSECTION: 9606

TABLE 7 (contd.)

c/o Main and Duncan streets (Side B)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	5	5	10	5	19	24
08h15-08h30	14	4	18	10	10	20
08h30-08h45	9	22	31	18	11	29
08h45-09h00	25	9	34	32	16	48
TOTAL:	53	40	93	65	56	121
09h00-09h15	37	11	48	51	8	59
09h15-09h30	51	36	87	51	18	69
09h30-09h45	42	36	78	42	45	87
09h45-10h00	41	15	56	43	9	52
TOTAL:	171	98	269	187	80	267
10h00-10h15	46	22	68	53	22	75
10h15-10h30	35	29	64	46	18	64
10h30-10h45	45	25	70	57	30	87
10h45-11h00	43	21	64	58	23	81
TOTAL:	169	97	266	214	93	307
11h00-11h15	66	46	112	43	24	67
11h15-11h30	24	21	45	48	22	70
11h30-11h45	62	34	96	56	30	86
11h45-12h00	36	29	65	35	21	56
TOTAL:	188	130	318	182	97	279
12h00-12h15	34	22	56	45	19	64
12h15-12h30	34	36	70	48	13	61
12h30-12h45	17	14	31	23	11	34
12h45-13h00	14	11	25	11	10	21
TOTAL:	99	83	182	127	53	180
GRAND TOTAL:	680	448	1128	775	379	1154

TOTAL FOR E. AND W.: 2282

TABLE 7 (contd.)

c/o Main and Duncan streets (Side C)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	19	9	28	10	6	16
08h15-08h30	18	11	29	20	21	41
08h30-08h45	2	4	6	17	14	31
08h45-09h00	2	2	4	9	4	13
TOTAL:	41	26	67	56	45	101
09h00-09h15	4	3	7	7	15	22
09h15-09h30	3	3	6	16	3	19
09h30-09h45	13	18	31	15	9	24
09h45-10h00	17	16	33	23	21	44
TOTAL:	37	40	77	61	48	109
10h00-10h15	19	14	33	23	17	40
10h15-10h30	36	18	54	10	24	34
10h30-10h45	49	69	118	64	68	132
10h45-11h00	35	43	78	29	37	66
TOTAL:	139	144	283	126	146	272
11h00-11h15	35	41	76	45	47	92
11h15-11h30	32	55	87	71	48	119
11h30-11h45	40	42	82	42	53	95
11h45-12h00	57	59	116	91	57	148
TOTAL:	164	197	361	249	205	454
12h00-12h15	81	54	135	59	55	114
12h15-12h30	66	66	132	57	54	111
12h30-12h45	109	56	165	76	38	114
12h45-13h00	20	25	45	28	23	51
TOTAL:	276	201	477	220	170	390
GRAND TOTAL:	657	608	1265	712	614	1326

TOTAL FOR E. AND W.: 2591

TABLE 7 (contd.)

c/o Main and Duncan streets (Side D)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	12	13	25	17	8	25
08h15-08h30	19	13	32	12	6	18
08h30-08h45	15	10	25	6	10	16
08h45-09h00	7	5	12	7	9	16
TOTAL:	53	41	94	42	33	75
09h00-09h15	6	5	11	5	14	19
09h15-09h30	12	8	20	16	4	20
09h30-09h45	18	7	25	2	12	14
09h45-10h00	17	12	29	24	13	37
TOTAL:	53	32	85	47	43	90
10h00-10h15	26	17	43	15	10	25
10h15-10h30	15	13	28	35	13	48
10h30-10h45	41	31	72	40	32	72
10h45-11h00	43	31	74	32	33	65
TOTAL:	125	92	217	122	88	210
11h00-11h15	43	34	77	63	27	90
11h15-11h30	51	19	70	45	25	70
11h30-11h45	39	30	69	43	35	78
11h45-12h00	42	30	72	47	28	75
TOTAL:	175	113	288	198	115	313
12h00-12h15	46	32	78	41	50	91
12h15-12h30	38	27	65	46	29	75
12h30-12h45	23	12	35	20	10	30
12h45-13h00	18	16	34	22	20	42
TOTAL:	125	87	212	129	109	238
GRAND TOTAL:	531	365	896	538	388	926

TOTAL FOR N. AND S.: 1822

TABLE 7 (contd.)

c/o Main and Cecil streets (Side A)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	4	1	5	5	-	5
08h15-08h30	5	6	11	-	-	-
08h30-08h45	2	3	5	2	4	6
08h45-09h00	3	3	6	-	-	-
TOTAL:	14	13	27	7	4	11
09h00-09h15	14	4	18	4	2	6
09h15-09h30	12	7	19	2	2	4
09h30-09h45	17	-	17	4	6	10
09h45-10h00	20	5	25	2	4	6
TOTAL:	63	16	79	12	14	26
10h00-10h15	14	3	17	5	4	9
10h15-10h30	16	5	21	5	3	8
10h30-10h45	5	8	13	6	9	15
10h45-11h00	10	4	14	6	6	12
TOTAL:	45	20	65	22	22	44
11h00-11h15	10	3	13	10	6	16
11h15-11h30	12	3	15	5	14	19
11h30-11h45	9	3	12	4	4	8
11h45-12h00	9	4	13	6	9	15
TOTAL:	40	13	53	25	33	58
12h00-12h15	14	-	14	7	25	32
12h15-12h30	6	5	11	6	13	19
12h30-12h45	13	-	13	3	20	23
12h45-13h00	7	4	11	12	10	22
TOTAL:	40	9	49	28	68	96
GRAND TOTAL:	202	71	273	94	141	235

TOTAL FOR N. AND S.: 508

TOTAL AT INTERSECTION.: 916

TABLE 7 (contd.)

c/o Main and Cecil streets (Side B)

	GOING EAST			GOING WEST		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	-	3	3	1	6	7
08h15-08h30	-	1	1	-	-	-
08h30-08h45	3	4	7	-	-	-
08h45-09h00	1	-	1	-	2	2
TOTAL:	4	8	12	1	8	9
09h00-09h15	2	1	3	1	8	9
09h15-09h30	2	4	6	7	8	15
09h30-09h45	2	-	2	4	5	9
09h45-10h00	8	1	9	-	3	3
TOTAL:	14	6	20	12	24	36
10h00-10h15	17	4	21	4	1	5
10h15-10h30	4	1	5	1	5	6
10h30-10h45	3	-	3	2	8	10
10h45-11h00	11	5	16	6	8	14
TOTAL:	35	10	45	13	22	35
11h00-11h15	10	12	22	3	9	12
11h15-11h30	10	12	22	4	30	34
11h30-11h45	3	3	6	8	26	34
11h45-12h00	5	4	9	4	14	18
TOTAL:	28	31	59	19	79	98
12h00-12h15	12	9	21	4	14	18
12h15-12h30	8	5	13	1	18	19
12h30-12h45	6	2	8	-	8	8
12h45-13h00	1	-	1	-	6	6
TOTAL:	27	16	43	5	46	51
GRAND TOTAL:	108	71	179	50	179	229

TOTAL FOR E. AND W.: 408

TABLE 7 (contd.)

Opposite Main and Fifth streets - Second-Hand Car Sales (25)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h15	2	9	11	2	5	7
08h15-08h30	3	11	14	3	2	5
08h30-08h45	3	7	10	1	4	5
08h45-09h00	5	18	23	4	3	7
TOTAL:	13	45	58	10	14	24
09h00-09h15	10	10	20	14	14	28
09h15-09h30	12	11	23	16	16	32
09h30-09h45	10	10	20	10	17	27
09h45-10h00	16	14	30	18	17	35
TOTAL:	48	45	93	58	64	122
10h00-10h15	11	9	20	7	10	17
10h15-10h30	8	14	22	11	19	30
10h30-10h45	7	10	17	6	17	23
10h45-11h00	9	9	18	16	15	31
TOTAL:	35	42	77	40	61	101
11h00-11h15	11	10	21	20	14	34
11h15-11h30	10	7	17	11	16	27
11h30-11h45	14	11	25	17	11	28
11h45-12h00	7	10	17	21	10	31
TOTAL:	42	38	80	69	51	120
12h00-12h15	13	13	26	6	10	16
12h15-12h30	12	10	22	9	13	22
12h30-12h45	20	10	30	9	18	27
12h45-13h00	14	5	19	11	29	40
TOTAL:	59	38	97	35	70	105
GRAND TOTAL:	197	208	405	212	260	472

TOTAL FOR N. AND S.: 877

TABLE 7 (contd.)

Opposite Main and Seventh streets in front of Trust Bank (26)

	GOING NORTH			GOING SOUTH		
TIME	WHITE	NON-WHITE	TOTAL	WHITE	NON-WHITE	TOTAL
08h00-08h30	5	11	16	19	9	28
08h30-09h00	35	7	42	11	16	27
TOTAL:	40	18	58	30	25	55
09h00-09h30	35	23	58	15	18	33
09h30-10h00	54	53	107	70	34	104
TOTAL:	89	76	165	85	52	137
10h00-10h30	95	46	141	72	24	96
10h30-11h00	74	46	120	90	38	128
TOTAL:	169	92	261	162	62	224
11h00-11h30	55	48	103	54	56	110
11h30-12h00	59	38	97	64	53	117
TOTAL:	114	86	200	118	109	227
12h00-12h30	50	33	83	71	82	153
12h30-13h00	47	64	111	51	66	117
TOTAL:	97	97	194	122	148	270
GRAND TOTAL:	509	369	878	517	396	913

TOTAL FOR N. AND S.: 1791

BIBLIOGRAPHY

A. BOOKS

ALEXANDER, J.W.; Economic Geography. Prentice-Hall Inc. Englewood Cliffs. New Jersey. 1963.

AMBROSE, P.; Analytical Human Geography. Longman Group Ltd. London. 1972.

BROMAGE, A.W.; Introduction to Municipal Government and Administration. Appleton-Century-Crofts Inc. New York. 1950.

CARTER, H.; The study of urban geography. Edward Arnold. London. 1972.

CARTWRIGHT, A.P.; Golden Age. Purnell and Sons (S.A.) (Pty) Ltd. Cape Town and Johannesburg. 1968.

CARTWRIGHT, A.P.; The Corner House. Purnell and Sons (S.A.) (Pty) Ltd. Cape Town and Johannesburg. 1965.

CARTWRIGHT, A.P.; The Gold Miners. Purnell and Sons (S.A.) (Pty) Ltd. Cape Town and Johannesburg. 1962.

COLE, M.; South Africa. Methuen and Co. Ltd. London. 1966.

DICKINSON, G.C.; Maps and Air Photographs. Edward Arnold (Publishers) Ltd. 1969.

DICKINSON, G.C.; Statistical mapping and the presentation of Statistics. The Camelot Press Ltd. London and Southampton. 1963.

DUNCAN, O.D.; Social Characteristics of urban and rural communities. 1950. John Wiley & Sons. Inc. New York. 1956.

DU TOIT, A.L.; Geology of South Africa. Olivier and Boyd. Edinburgh. 1939.

FLOYD, T.B.; More about town planning in South Africa. Shuter and Shooter. Pietermaritzburg. 1966.

FLOYD, T.B.; Town planning in South Africa. Shuter and Shooter. Pietermaritzburg. 1960.

HERBERT, D.; Urban Geography - A social perspective. David and Charles. Newton Abbot. 1972.

HORWOOD, C.B.; The Gold Deposits of the Rand. Charles Griffen & Company Ltd. London. 1917.

JOHNSON, J.H.; Urban Geography - An introductory analysis. Pergamon Press. Oxford. 1972.

MONKHOUSE, F.J. & WILKINSON, H.R.; Maps and Diagrams. Methuen + Co. London. 1966.
~~Methuen & Co. London. 1966.~~

MURPHY, R.E.; The American City: an urban geography. Mc Graw-Hill Book Company. New York. 1966.

POTGIETER, D.J. (Editor-In-Chief); Standard Encyclopaedia of Southern Africa: Volume 6 and Volume 9. Nasou Ltd. Volume 6, 1972 and Volume 9, 1973.

RAISZ, E.; Principles of cartography. Mc Graw-Hill Book Company, Inc. New York. 1962.

ROBINSON, A.H. & RANDALL, D.S.; Elements of Cartography. John Wiley & Sons. Inc. New York. 1969.

TAYLOR, G.; Urban Geography. Methuen and Co. Ltd. London. 1968.

TOYNE, P. & NEWBY, P.T.; Techniques in Human Geography. Mac Millan Education Ltd. London. 1971.

B. UNPUBLISHED THESES

NIEUWOUDT, A.; 'n Stedelik-geografiese studie van Upington. Unpublished M.A. thesis. University of Stellenbosch. 1970

VAN LOGGERENBERG, E.; 'n Geografiese studie van die stedelike gebied van Parys, O.V.S. Unpublished M.A. thesis. Potchefstroom University for Christian Higher Education. 1973.

C. OFFICIAL PUBLICATIONS

BUREAU OF STATISTICS; Population Census. Government Printer. Pretoria. Editions of 1921, 1926, 1936, 1946, 1951, 1960, 1970.

DEPARTMENT OF AGRICULTURAL TECHNICAL SERVICES; The Highveld Region Serves the Farmer. Government Printers. 1963.

MAIL COACH FESTIVAL; Randfontein 8th February 1952.

OFFICIAL SOUTH AFRICAN MUNICIPAL YEAR BOOK. 1970-71.

RANDFONTEIN; Co-operative Press of S.A. Ltd. Pretoria. 1972.

RANDFONTEIN - 21ST ANNIVERSARY; World Wide Publishing Company. Johannesburg. 1950.

RANDFONTEIN - INDUSTRIAL CITY OF THE FUTURE; Hayne & Gibson. Johannesburg. 1959.

RANDFONTEIN - THE SPIRIT OF PROGRESS; Felstar Publishers (Pty.) Ltd. Johannesburg. 1966.

RANDFONTEIN TOWN PLANNING SCHEME NO. 1. 1948.

RANDFONTEIN TOWN PLANNING SCHEME NO. 2. 1953.